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Service Paper

THE EDUCATIONAL POTENTIALITIES OF TELEVISION

Submitted by

George William Slade

(B.S. in J., Boston University, 1935)

In Partial Fulfillment of the Requirements

for the degree of

Master of Education

1949

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

> One of the potentially great uses for television is in the field of teaching. The television picture tube may never replace the blackboard, but its possibilities for reducing the training period are so intriguing that it surely will enlist the cooperation of the nation's educators in the use of television technique as an important supplementary teaching aid.[1]

Similar comments are appearing in American newspapers, in magazine articles and in books with increased regularity since the Federal Communications Commission approved plans for commercial television in 1941. The years of the Second World War, during which equipment for expansion of the American television service was diverted to more urgent needs, held the total of television stations in this country to nine. In the twenty months prior to February 1, 1949, there has been a tremendous boom in television and approximately forty such stations are transmitting at the present time, and the Federal Communications Commission is "snowed under" with applications for additional licenses in various sections of the country.

Many experienced observers are comparing present-day television to the standard broadcasting service of the early and middle 1920's, and in many ways they would appear to be

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[1] Dr. W. R. G. Baker, Vice-President, General Electric Company, "In the Fields of Education and Art," New York Times, 10:18, June 13, 1948.

correct in their reasoning. It will be remembered that the early radio programs were crude and, for the most part, were available mostly during evening hours. The same is true of television today.

Educators were quick to enthuse about the educational potentialities of aural broadcasting. The same has been true of many educators as they first consider television. Varied claims have been made, mostly by those with special fields of interest which they are convinced are especially suited to television presentation. Broadcasters and spokesmen for large corporations also have made glowing observations on the future of television in education without regard for the problems which such a development involves.

The writer has been deeply concerned with the possible use of television as an aid to education for several years and has viewed with increasing awareness that the comments, information, and experiences of pioneer television programs with an educational intent, have never been assembled and evaluated so that other educators and broadcasters might avoid the pitfalls of those earlier television performances.

Statement of the Problem. It is the objective of this study:

(1) to investigate all generally available published books, magazines, pamphlets, and newspaper articles, dealing with education and television in the United States.

(2) to supplement this information with interviews with leaders in the television field in Boston and New York; as well as with personal observations on the newest medium of mass communication.

(3) to investigate the experiences of the British Broadcasting Corporation with educational television, and contrast this with the experiences of television in the United States.

(4) to note all possible educational programs thus far presented in the United States by:

a. Networks
b. Local stations
c. Colleges and Universities
d. School Groups

(5) to report the interest of the viewing and listening public in educational telecasts as revealed by surveys, viewings in a classroom situation, and such other methods as develop during the course of this study.

(6) to present the status of education and television throughout the country.

(7) to suggest procedures which might be followed by educators in their future association with television.

(8) to suggest the problems yet to be solved in making education by television most effective.

(9) to suggest areas of educational television needing further study by educators.

Importance of the Study. Hubbell[2] reports that television, psychologically, is the extension of seeing and hearing over great distances and that vision and hearing are man's two most important senses through which are acquired approximately ninety-eight per cent of all knowledge. Of this total, roughly ninety per cent is learned through seeing and only eight per cent through hearing. The remaining two per cent of human knowledge is acquired through the other senses: smell, touch, and taste.

Sociologically, television should be the most potent medium of education and propaganda. Sarnoff[3] has referred to television's ultimate contribution as being a means of unifying the life of the nation, and at the same time, the greater development of the life of the individual.

Lee[4] agrees with this sociological view of television as he writes:

> Not for years will we realize the entire impact of television's force for good. A generation will soon grow up to accept the video receiver as a matter-of-fact piece of furniture in the living room. These young minds will be most affected. For television can be a mass educational force equal to all the universities lumped into one. The best thing about tele education is - it's painless. Unfortunately, we generally dislike things which are good for us. But sight broadcasting makes education at all ages a remarkably

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[2] Richard Hubbell, Television Programming and Production (New York: Murray Hill Books, 1945) pp. 12-13.

[3] David Sarnoff, President, Radio Corporation of America, Bulletin to NBC Affiliated Stations, 1944.

[4] Robert E. Lee, Television: The Revolution (New York: Essential Books, 1944), pp. 225.

> pleasant process. Television can make us much better citizens - not only of our own nations, but of the world. We will be much more aware of what's going on. The concept of things foreign will vanish. You can't consider a man a foreigner who sat down to chat with you as a guest in your own living room - albeit electronically. From the fluorescent screens of our video receivers we will glean the knowledge to judge wisely.

Dr. Lee deForest, one of the great pioneers of radio and of television, is another leader who is aware of the importance of television in American life. He writes:

> Its value to our national good far surpasses that of radio, potent as that is - 'A tremendous force is awakening a social consciousness in the youth which will be our next generation.' In its educational fields television program material is limitless.[5]

Throughout its rapid development few coordinated efforts have been undertaken to assemble information and experiences of educators using television. Hence, additional school and college groups are learning about television in the completely unscientific method of "trial-and-error." Realizing this fact, the American University at Washington, D.C., is setting up a clearing house for such information as well as a repository for historical data on the medium.

The writer will endeavor to keep simple the vocabulary of this study so that it will not be confusing to the educator or to the lay reader. However, there are a few terms appearing on these pages which should be defined at the outset. These include:

AMPLITUDE MODULATION is the technical name for long wave or standard broadcasting which has been the method popular

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[5] *Op. Cit.*, p. x.

in the United States over the past twenty-nine years. It also is frequently referred to as AM radio.

CLOSED CIRCUIT is the term applied to programs which are transmitted from point-to-point over telephone lines and are not sent out over the air. This has been a policy with major networks for many years during which they have resorted to closed circuit talks to explain promotional campaigns, new programs, etc., to affiliated station operators from coast-to-coast.

COLOR TELEVISION is the method whereby it is expected that scenes and entertainment in full natural color may be transmitted. A method of color television has been developed by the Columbia Broadcasting System and was demonstrated for the Federal Communications Commission early in 1948. However, it was ordered back to the research laboratories, and specialists continue to be quoted in the radio trade press as saying color television remains approximately five years away.

DIRECT VIEW TELEVISION is the receiver on which the viewing audience sees the telecast on the end of the kinescope or cathode ray-type of tube.

ICONOSCOPE is the tube which serves as the camera's eye in the studio. This tube was developed by Dr. Vladimir K. Zwoykin and is located in the television cameras at the point where the program is originated. This tube is constantly being improved and one of the improved types is known

as the Image Orthocon.

INSTITUTIONALLY SPONSORED means that the costs of a program are underwritten by a commercial firm such as a public utility, bank or insurance company, primarily service organizations. It has been agreed that this type of sponsorship is not as objectionable as the average radio commercial advertising.

KINESCOPE is the cathode ray-type of tube in the television receiving set which reconstructs the picture from the electronic impulses in which form it had been transmitted.

LARGE-SCALE IMAGE is usually derived by projecting the picture from the face of the kinescope onto a mirror or other enlarging device. It is one of the projects on which considerable research is being carried on to overcome public objections to the size of the picture now generally available on receiving sets.

MONOCHROME IMAGE is the technical term applied to black-and-white television pictures.

PROJECTION TELEVISION is the same as large-scale image.

SCANNING DISC is the old method of television which combined the conventional form of radio transmission with mechanical manipulation. This method was replaced by the development of electronic methods in the early 1930's.

SUSTAINERS is the trade term for all non-commercial or un-sponsored programs on both standard radio and in television. However, one major network (National Broadcasting

Company) prefers to use the term Feature Service for its unsponsored television programs.

TELEVISION, according to the New Standard Dictionary, is the instantaneous transmission to a distance of images, views, or objects by telegraphy either with wires or without. In the course of this study the terms video, tele, and telecast are used as synonyms for television.

CHAPTER II

HISTORY OF THE MEDIUM AND PREVIOUS RESEARCH

Although the concept of television is older than voice broadcasting, colleges, universities, and other school groups have had little opportunity to do much more than a few scattered public service programs over the nation's rapidly-increasing number of television stations.

White[1] reported that in 1946 the University of Iowa had an experimental television station, while Purdue also had a station under construction. Western Reserve University, Kansas State College, and Johns Hopkins University were among a score of non-commercial television applicants. Western Reserve is an educational member of the Television Broadcasters Association[2] along with the Department of Drama at Yale University, the New School for Social Research in New York, Rutgers University, Syracuse University, Capitol Radio Engineering Institute and the National Radio Institute. The University of California at Los Angeles has been working with the Don Lee Network television staff.

In the public school field, White also reported that the Columbia Broadcasting System and the National Broadcasting

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[1] Llewellyn White, The American Radio (Chicago: The University of Chicago Press, 1947), p. 107.

[2] Founded in 1944 to foster and advance the development of television as a new system to the public and as a new industry - Weekly Newsletter on Television, May 5, 1946.

Company were cooperating with the New York Board of Education in experimental work which is explained in greater detail later in this study.

There is a strong parallel between radio broadcasting of the early 1920's and television of the present time. During the former period various agencies were concentrating their efforts upon developing the medium and its programs, with a result that few of the pioneers took time to record their experiments; hence, literature for broadcasting's "Dark Ages" is woefully incomplete. The same thing is happening in television. Engineers, commercial broadcasters, and educators are working on the problem, but little of value to other interested persons has appeared in print. Much of the existing literature on the American system of television has been written by persons of little experience with the medium. There are a few exceptions, and the writer has endeavored, through interviews with leaders in the industry and others, to evaluate these writings and assemble into a single report that part of the reservoir of materials which is considered of maximum value by the industry and by the handful of radio educators who already are working with the newest communications medium.

To trace the dramatic story of television's progress since Baron Berzelius discovered selenium in 1817 would require a volume in itself; and so in this report only the most important highlights can be touched upon. Although

selenium was isolated in 1817 by the famous Swiss chemist, little was done about it until 1873 when a telegrapher named May, at the Valentia Cable Station on the Irish coast, discovered that resistors made of selenium transmitted a much stronger signal when exposed to sunlight. It was not until several years later that these mysterious light-sensitive properties were embodied in the famous photo-electric cell invented by Elster and Geitel in 1890 - the cell which subsequently became the principle upon which all-electronic television was founded.

Just as Jules Verne, the famous French romanticist, was prophetic in his exciting fantasies of adventure, so the distinguished Parisian caricaturist Albert Robida depicted in the early 1880's some of the popular conceptions of what the future held for television. With uncanny accuracy, Robida showed an opera, a foreign correspondent reporting the African War, and a woman studying mathematics, via what he called a "telephotoscope" screen.[3]

It was not until 1907 that two French inventors, Rignoux and Fournier, transmitted a crude moving image over wires, the same year that Dr. Lee deForest perfected his famous vacuum tube amplifier together with a filament, plate and grid. In 1907, Resing and Campbell Swinton proposed the first use of the cathode ray tube for television, and in

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[3] Television's First Year, a pamphlet issued by the National Broadcasting Company: New York, 1940.

1909, Knudsen sent the first drawing by radio.

Then followed bleak years in television progress, partly due to the events of World War I. In the early 1920's relatively successful tests combining radio transmission and mechanical manipulation were held in this country. In 1923 President Harding's moving image was televised between Washington and Philadelphia.

> The first great strides were not made, however, until after the perfection of the cathode ray, when a number of engineers attempted to devise an all-electronic, all-radio system. In 1930 N.B.C. opened an experimental television station in New York and borrowed from Westinghouse Vladimir Zwerykin, who had demonstrated his kinescope or cathode ray receiver the year before. Shortly after going to the Radio Corporation of America, Zwerykin perfected his iconoscope; and in 1933 both he and Philo Farnsworth of the Farnsworth Laboratory, Inc., produced 240-line black-and-white images over short distances which compared very favorably with the 30 and 60-line images theretofore transmitted, but which still required mechanical "scanning" at the sending end. By 1935 the standard had been raised to 343 lines, and by 1940 to 525.[4]

While leading educators and spokesmen for the industry agree that television is bound to create a new concept of education in the home and classroom, only three colleges and universities have been working with the medium more or less regularly since 1932. The University of Iowa, Purdue, and Kansas State conducted experiments with the old-type scanning disc and these are described at greater length later in this study.

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[4] Llewellyn White, The American Radio (Chicago: University of Chicago Press, 1947), pp. 23-24.

Hutchinson[5] prepared the first educational television series on WNBT, New York. This was the Yale University series "The Chronicles of America," photoplays tracing the nation's history from Columbus to the Civil War. Each film was supplemented by a talk or discussion by prominent speakers and were presented by the National Broadcasting Company in cooperation with the Yale Press and the Department of Secondary Teachers, National Education Association.

The New York World's Fair gave American television tremendous impetus and the race was on between New York and London. Dunlap[6] writes that both were qualified as centers in which to start television because of their densely populated areas. Scientifically, in electronic television, New York was ahead. The British, to keep pace, also took to the Iconoscope developed in the United States. London did, however, have a head start in programming as a regular service to the public and in the marketing of receivers.

The government subsidy of the British Broadcasting Corporation enabled that group to develop a more advanced method of television programs than those of the United States prior to World War II. With the coming of the great struggle with the Axis Powers, Britain closed down its television activities for the "duration." In the United States, the

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[5] J. Raymond Hutchinson, "Television Education," Secondary Education, April-June, 1945.

[6] Orrin E. Dunlap, Jr., The Future of Television (New York: Harper and Brothers, 1947), pp. 5-7.

handful of stations curtailed their hours of televising, but they used the war years to catch up to their British brothers.

At the present time American television programs are regarded as superior to those in any other country of the world. The most recent reports indicate that the United States already has approximately forty television stations in operation and plans call for the number to exceed 150 by the early part of 1950.

As might be expected in a new field which is still growing out of an experimental phase, there is much conflicting information concerning television. However, quoting from a Tele-Tech statement the 1949 World Almanac[7] states:

> Television broke upon the consciousness of the American public as a great new force in 1948. As the year closed nearly 900,000 television sets were in use. (Prospects were that 2,500,000 television sets would be in United States homes by the end of 1949, with 150 stations in operation.) Average prices of television sets sold during 1948 was $400, with models ranging from $170 to $2,495, plus an average cost of $65 for antenna and installation. Public interest in larger pictures (14-inch direct view and 20-inch projection) indicated the trend for 1949.
>
> During 1948 television programs were greatly broadened, including sports, drama, newsreels, outstanding events like national political conventions, feature films, fashions, home economics, child-training, and, in fact, every department of human activity. More sensitive camera permitted minimum studio lighting, and complete comfort for persons being televised.
>
> Television networks linking Boston, New York, Philadelphia, Baltimore, Washington, and Richmond were in everyday use during 1948.

The field of research in the possible use of television

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[7] Television, World Almanac, (New York: World Telegram, 1949) p. 303.

for education is limited to a single study made in 1939. Swinebrook[8] found that the radio movement in education had become definitely established, and radio supplemented by television, appears destined to become increasingly valuable as an instrument of instruction. This was the only study found during a search of the research literature recorded in the Boston University and Harvard School of Education libraries. There may have been more recent theses on the subject, but the United States Office of Education has not edited a catalog since 1940 owing to a budgetary curtailment.

Indicative of a growing awareness of the need for investigating television education is the announcement by the University of Cincinnati, January 31, 1949, that a $2500 Fellowship has been created by the Crosley Broadcasting Corporation to study the relations between television and education. President James D. Shouse[9] of the Crosley Corporation stated at that time: "The Study would attempt to determine how education and television can best be correlated in the interest of the public generally in the early stages of this new art."

Two candidates for doctorates are reported[10] in the 1948-1949 listing published by Phi Delta Kappa. C. Walter

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[8] Jeff Davis Swinebrook, "Education by Radio and Television: A Survey of Current Trends," Master's thesis, Abstract in University of Colorado Studies, 26:121-22.

[9] "Inside Television," Variety, February 2, 1949, p. 46.

[10] Carter V. Good, Doctors' Dissertations Under Way in Education, 1948-1949, The Phi Delta Kappan, 30:199 and 217, February 1949.

Stone is preparing his dissertation on "The Role of Television in Adult Education" and is to submit it at Columbia University. The other dissertation, "Television in Music Education," is being prepared by Alexander Antonowich, also at Columbia.

CHAPTER III

METHOD OF PROCEDURE FOR THE STUDY

It now becomes essential that the writer introduce a definition for an educational program. So far as radio is concerned there have been many conferences held by educators and broadcasters in an effort to agree upon such a definition.

> The eminent radio speaker, professor, and former legislator, T. V. Smith, indicates that a program is educational "when intelligent people talk about something important." Whether all educational programs need be of the "talk" type is, of course, open to question. The definition presented by W. W. Charters has been accepted generally. He defines an educational program as "One whose purpose it is to raise standards of taste, to increase the range of valuable information, or to stimulate audiences to undertake worthwhile activities."[1]

Used in a general sense, two major divisions of educational programs may be:

1. The broadcasting of part of the formal curriculum into the classroom or home. This group would include many of the programs built by radio stations and networks which follow a definite schedule of progression.

2. The broadcasting of a wide variety of more informal programs. This group includes news events, eye-witness programs, speeches, music and dramatizations.

The Federal Communications Commission licenses commercial

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[1] William B. Levenson, Teaching Through Radio (New York: Farrar and Rinehart, 1945), p. 34.

broadcasters to operate in the public interest, convenience and/or necessity. However, it did not make any effort to establish definitions for program types for fear of being accused of assuming the role of censors, or of violating the right of freedom of speech. With the publication of the so-called "Blue Book," the Commission went on record as defining: An educational program is one produced by or for an educational organization.

On the 1948-1949 commercial station license renewal application forms, section 4, subsection 1a, appeared a request that the station specifically indicate all programs "produced by or for an educational organization."

Since television is generally governed by the rules and regulations established for conventional broadcasting, it might be well to accept the Charters definition of an educational program for the purposes of this study, bearing in mind that the Federal Communications Commission apparently is passing along the responsibility to the educators in the only official policy pronouncement to date.

There are three distinct phases of this study of the educational possibilities of television. The pages which follow represent a study made over a two-year period ending February 1, 1949. ✓

In the first part the writer will endeavor to locate all available information on television and education and on the television audience, in books, educational journals,

magazines of the radio and television trade, and such other sources as they develop. This information will be evaluated, conflicting materials studied and checked as carefully as possible to determine the truth.

In the second phase a brief questionnaire will be prepared and mailed to the Manager of each of the twenty-six non-commercial radio stations listed in the Radio Annual to determine the television interest and plans for these educators most of whom pioneered in the field of serious broadcasting over regular radio facilities. Their replies will be tabulated and any indicated trends reported.

The third part of the study will concern itself with the educational program experience and interests of the commercial stations and networks. Featured will be a comparative study made of the commercially-sponsored educational programs televised in this country between July 1947 and December 1948. These will be checked to determine trends in the field of education by television. Basic figures for this section will come from the bi-monthly statistics compiled by Bruce Robertson, Senior Associate Editor of Broadcasting Magazine.

From this survey of the television listeners, reports of the views on educational television expressed by professional educators as against commercial broadcasters, a digest of what has been done with the newer medium by school,

colleges, local stations and networks to date, plus the results of the two major studies noted in the pages which follow, will come a summary of educational television's status today and the areas calling for intensive study and research at an early date if education is to avoid many of the pitfalls encountered by standard broadcasting a generation ago.

CHAPTER IV

THE TELEVISION AUDIENCE

A weakness in educational broadcasting during the early days of standard broadcasting was that little was known about the listeners, their likes and dislikes. As a result, many educators used little ingenuity in presenting their efforts on the radio and gradually many of the educational radio stations passed out of existence, and their frequencies were reallocated by the Federal Communications Commission to commercial broadcasters.

Broadcasters are well aware of the weakness of not "knowing" their listeners, and in recent years a number of audience research groups have been organized. As television stepped out of the laboratory phase and entered upon a formal system of community service, the station operators were prompt to define the problems of television audience research as follows:

A. Set Ownership
B. Description of television set owners
C. General viewing habits
D. Program preferences
E. Reactions of set owners
F. Special problems of set owners

In setting forth the above six problems of television audience research, Robert H. Salk, President, Audience Surveys[1] says this list is by no means complete. He believes

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[1] Telestatus report in Broadcasting Magazine, p. 14, September 27, 1948.

that no one can state today definitely what areas of television research will have to be investigated, and the foregoing points are those which seem worthy of consideration up to this time.

For the purposes of this study the writer has collected all available audience research information which might be of value in planning educational programming on the newest medium.

Set Ownership.-- Whenever television service is extended into an area, the first receivers ordinarily appear in public places, bars, taverns, lounges and the like. This fact has caused many persons to believe that the television viewing is done in large groups, but with limited interests and an overwhelming concern for sports programs. George Moscovies, Sales Manager of WCBS-TV,[2] in speaking to the Advertising Club of Boston reported over 80 per cent of the television sets in the New York area were in private homes, while another 10 per cent were in public places and the remaining 10 per cent in dealers' showrooms.

A further view of the television receiving set owners in New York was published in the April 1948 issue of Television Magazine. On the basis of three studies of television set ownership conducted by WCBS-TV, The Pulse, Inc., and WPIX, the middle-income groups form the majority of owners.

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[2] Quoted from Advertising Club of Boston meeting, February 10, 1948.

In doing their breakdowns, WCBS-TV and The Pulse used the Socio-economic classifications of A, B, C, and D. These consist of ratings by trained interviewers of respondents' homes according to predetermined criteria with A being the high income group; B, upper middle; C, middle, and D poor. These have been found to be very effective in measuring the economic status of various groups. On the other hand, WPIX used the five standard rental district classifications. These consist of classifying homes according to the rental district in which they are located. The rental districts are grouped according to the median rental of homes in the district as compiled by the Bureau of the Census.

On the surface it would appear that the different methods would cause a great discrepancy among the surveys. However, if we group the data into three classifications: upper, middle and lower, we find that the surveys show much agreement.[3] This would result in the following statistics:

	WCBS-TV	The Pulse	WPIX
Upper Income Group	25%	30.6%	26.5%
Middle Income Group	73	57.8	60.1
Low Income Group	2	11.6	13.4
	100	100.0	100.0

Another report was released last June by Newell-Emmett Company, New York, which established "Videotown--USA"[4] to study the growth of television and analyze the television market for that advertising agency's clients. "Videotown" is located on the fringe of New York's television area although the agency declines to reveal the exact location. The sample town is a self-contained community supported by industry, agriculture and distribution.

The "Videotown" survey, which substantiates the

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[3] Analysis of TV Set Ownership in New York area, Television Magazine, April 1948.

[4] Telestatus report in Broadcasting Magazine, p. 18, June 21, 1948.

previous three studies, shows:

Upper Income Group	26%
Middle Income Group	60
Low Income Group	14
	100

No information is available on the Boston television receiver owners. However, W. Gordon Swan[5] reports that more television sets were purchased by residents of Eastern Massachusetts since June 1948, than had been installed in Detroit, Michigan, during the two years that that city has had television service. This attests to the interest which many Boston people are evidencing in the newer medium even though this section has television service only from WBZ-TV and WNAC-TV. It is Mr. Swan's opinion that the percentages of television set distribution in the New York area are "probably applicable to the Boston picture." WBZ-TV and WNAC-TV reported 45,120 receivers in the forty-mile Boston area on February 1, 1949, with potential sales to 1,175,000 families.

Description of TV Set Owners.-- Nearly four out of every five television receivers are in private homes, and, according to the "Videotown" study, slightly more than half of these receivers are in one-family houses, 18 per cent in two-family houses, and the remaining sets in larger apartment houses.[6] From the foregoing section, it may be concluded

---

[5] Program Manager, WBZ-TV, Boston, during an interview with the writer, November 22, 1948.

[6] Telestatus report in Broadcasting Magazine, p. 18, June 21, 1948.

that the majority of the television set owners are in the middle income brackets.

Broadcasting quotes Dr. Sydney Roslow, director of The Pulse finding in January 1949 that families without telephones comprise 13.5 per cent of the total television families in the New York area.

A survey of the television audience in the Schenectady, New York, area by General Electric station WRGB in the fall of 1944, showed an average of four to five persons per set in the viewing audience.[7] This same study reported that 26 per cent of the television audience was under eighteen years of age, and that about half of the set owners had children in the family group.

It must be remembered that the General Electric study was made at a time when there were only nine stations in the entire country, and the home-viewing groups were greatly enhanced by inviting friends and neighbors into the homes of set owners whenever television programs were on the air. It also was customary for children to invite their friends in to watch programs.

At the present time there are more than forty television stations in operation, and much of the novelty of the new medium has worn off. This is evidenced by the report of Mr. Moscovics[8] that each television set in the New York area

---

[7] Judy Dupuy, Television Show Business (Schenectady, New York, General Electric, 1945), p. 210.

[8] Quoted from Advertising Club of Boston meeting, February 10, 1948.

averages 3.1 viewers each evening in the week. This figure is slightly less than the figure announced by C. E. Hooper, Inc., television ratings announced in May 1948. The Hooper group reported 3.85 viewers per set.

> While millions of American homes contain more than one radio, one costly television set is about all most families can cope with. This partly explains why there are more viewers-per-set than radio-listeners-per-set. Between 8 and 9 p.m. on an average night, the radio audience consists of about 2.37 listeners-per-set (C.E. Hooper figures). At the same time, according to the two-agency study (Benton and Bowles, Inc., and Young and Rubican, Inc.), television averages 3.54 viewers-per-set...
>
> These people (television set owners) are mostly in the upper educational brackets. As we all know, virtually everybody owns a radio. But the average New York family with a television set is headed by an executive, a professional man, or one who has his own business. He has been graduated from high school and attended some college. The family has a telephone. They pay more than $75 a month for rent.[9]

General Viewing Habits.-- This same article goes on to say that the average television set owner in the New York area invites friends to drop in and see telecasts three times a week or more often. These same families use their tv receivers 17 hours a week. Thirty-six per cent of those interviewed in the joint agency survey used their sets more than 20 hours per week.

Dr. Roslow[10] reported that the viewing habits of telephone and non-telephone families differ, with 100 per cent of the non-phone families using their sets during the course

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[9] L. T. Steele, "Report on Television," The American Mercury, p. 556, 558, May 1948.

[10] Sydney Roslow, "Phone Survey 'Out' in TV," Broadcasting Magazine, p. 53, January 26, 1948.

of the day, while 81 per cent of the telephone families used their video receivers.

He concluded from his study that the weight of the non-telephone families in the television audience will "steadily increase." To them the television set will be a principal means of entertainment and relaxation. Their sets will be in heavy use.

The 1944 study made by General Electric indicated:

> a. Set owners plan their television viewing
> b. Prefer week-end programs to other nights in the week
> c. Four-fifths did not care for afternoon programs, except on Sundays
> d. Fifty per cent requested programs for the children in the afternoon, especially on Sundays.[11]

John Ballantyne, Chairman of the Board, Philco Corporation, writing in The New York Times, June 13, 1948, said:

> Recent surveys indicate that the average "television family" spends about three hours a day watching programs. Multiply three by the seven days of the week, and you'll find that viewers have their sets in use about two-thirds of the time that telecasts are actually on the air. Of course, this is a much higher percentage of operating time than surveys of radio listening have shown in recent years.

As yet, no viewing habits have been established to compare with the familiar patterns of radio listening according to Mr. Steele's article:

> The audience shifts mercurially from station to station to station, depending on what is being telecast. Men prefer baseball, boxing and "live" drama (as distinct from films), in that order. Women prefer live drama,

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[11] Judy Dupuy, Television Show Business, (Schenectady, N.Y., General Electric, 1945) p. 210.

feature films, baseball and boxing. The children like Western films and kid shows built especially for them.[12]

Program Preferences.-- Variety, the Magazine of Show Business, recently commissioned The Pulse, Inc., to make a survey of program viewing habits of set owners in New York and New Jersey. In answer to the question, "What is your favorite type of program," they received responses from 327 families.[13] The following totals exceed 100 per cent because of multiple answers from viewers:

Variety, vaudeville, comedy	46.2%
Sports	22.9
Drama and plays	19.0
Feature films, movies	17.5
Musical programs	4.3
Kid shows	3.1
Quiz shows	2.7
Science and Education	2.7
News	2,3
Special events (circus, rodeo, etc.)	1.6
Food and cooking	.8
No favorite type	3.9

The same study shows that this same 2.7 per cent who consider science and education as their favorite type of television program also would like to see more educational programs available. Their number is greatly increased if one figures into the total as educational the following types which these same television viewers would like to have presented regularly at the earliest opportunity by the existing television stations:

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[12] L. T. Steele, "Report on Television," The American Mercury, April 1948.

[13] George Rosen, "46% of TV Viewers Prefer Vaudeo," Variety, p. 29, November 17, 1948.

Classical, symphonic music	2.3%
Opera	1.6
Forums and discussions	1.2
Homemaking programs	3.9
	9.0

These added to the 2.7 per cent requesting more educational programs gives a total of 11.7 per cent desiring more programs with a cultural, educational, or listener self-improvement objective. This, of course, forms a substantial portion of the television-viewing audience, and if the newer medium is to operate "in the public interest, convenience and/or necessity," as in the case of aural broadcasting, then program planners must meet this suggestion from its viewing audience.

The top three programs requested in the Variety study indicates that viewers would like:

New, better and good movies	22.7%
Topflight radio comedians	19.0
Latest Broadway plays	15.9

Substantiating the Variety study is the report by the Benton and Bowles researchers[14] who were told by viewers that what they would like to see most on television would be:

1. Good new motion pictures
2. Good radio shows - Bob Hope, Bing Crosby, etc.
3. Broadway shows

Satisfaction with present television programs was expressed by only 45 per cent of the 9,341 video set owners in New York, Philadelphia, and Chicago and adjacent areas

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[14] L. T. Steele, "Report on Television," The American Mercury, pp. 558-559, April 1948.

questioned in a survey conducted by William Blethke, general education director of LaSalle Extension University in Chicago and published in The New York Times, December 1, 1948.

Results of the Bethke survey indicated that 62 per cent of the respondents would be willing to pay "a reasonable fee" for additional transmissions of first-run motion pictures, Broadway plays, newsreels, and championship sports events not now available on free television.

Television set owners in the Schenectady, New York, area, on a basis of questionnaires returned to station WRGB over a five-year period prior to 1945, listed educational and science programs in twelfth place for popularity. During the 1943-1944 winter season, education was rated sixth but was unable to hold this position on the longer basis.

The WRGB five-year study[15] follows:

Light opera	2.30%
Puppets	2.23
News	2.18
Variety shows and revues	2.12
Three-act plays	2.12
Sports	2.04
Personalities	2.00
Vaudeville acts	1.91
Short dramas	1.88
Commercials	1.88
Music:	
Soloist (Instrumental)	1.81
Soloist (Vocal)	1.77
Ensemble	1.62
Educational Programs	1.77
Games and Quizzes	1.77
Women's Programs	1.76
Dance Programs	1.72
Talks and Discussions	1.65

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[15] Judy Dupuy, Television Show Business (Schenectady, New York, General Electric, 1945), p. 211.

The procedures for compiling these studies has not been standardized thus far in the development of television so that much of this information may be disproved by subsequent investigations.

Reactions of Set Owners.-- Not to be overlooked is the "loyalty" angle of television set owners. When asked "Are there any programs you don't like now as much as formerly?", 76.6 per cent say "they do not like any programs less than they did a year ago." Another 15.6 per cent admitted having lost interest in certain types of television shows during this same period. Both these facts were pointed up in the Variety study published November 17, 1948.

This decline of interest is reflected in the following statistics:[16]

Western motion pictures	1.6%
Movies which excite children	.8
Old motion pictures	1.2
Boxing	1.2
Amateur Hour	.8
Howdy-Doody	1.6
Birthday Party	.4
Wrestling	.8
Toast of the Town	1.9
Travelogues	.4
Champagne and Orchids	.8
Face the Music	.8
Charade Quiz	1.2
Film Shorts	.4
Texaco Star Theatre	1.9
We, the People	1.2
Jack London	.4
Movies	.4
Bobby Breen	.4
All programs	.8
	15.6%

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[16] George Rosen, "46% of TV Viewers Prefer Vaudeo," Variety, p. 29, November 17, 1948.

The almost complete absence of educational and scientific telecasts from the foregoing list should be heartening to those interested in the public-service type of programming on this new medium.

The Columbia Broadcasting System Television Audience Research Institute conducted a number of tests with the Lazarsfeld-Stanton Program Analyzers, more commonly known in the broadcasting industry as the "Big Annie" or the "Little Annie." Results of these special studies were compiled by Oscar Katz and Ernest Dichter. In describing what people like on television, they report that at least one respondent at each session spoke of the tremendous possibilities of television as an educational medium.

> People expect television to show them things they have never seen before, to show them how to do things, to take them on exciting tours of exploration. They not only expect these things of post war television, they eagerly anticipate them.
>
> But education via television will have to lean heavily on the visual element if it is to be successful. Television, wherever possible, should demonstrate rather than explain. Programs that too closely resemble classroom lectures have been rejected by our panels. A particularly successful program, on the other hand, was one called "Romance of the Music Box." A widely varied collection of music boxes was displayed, and the history and background of each was explained to the accompaniment of its own music. The truth is that most people want their education simplified, if not sugar-coated.[17]

Special Problems of Set Owners.-- The principal problem of the television set owners concerns itself with the size

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[17] Oscar Katz, et al, Television Audience Research (New York: Columbia Broadcasting System, 1945), p. 10.

of the picture reproduced in the home. The so-called inexpensive receivers sell for about $175 and provide only a seven-inch television picture. The ten-inch and twelve-inch direct viewing tube receivers range from $300 up. Only last spring one manufacturer (Pilot) announced a television receiving set for less than $100, but it would present only a three-inch picture on its kinescope tube.

High on the list of complaints registered through tests by the Columbia Broadcasting System is "eye fatigue." The reasons most frequently given are:[18]

a. that the picture is not clear enough to be seen without strain
b. the small screen requres an unnatural concentration of attention

These are problems that are being worked out by television engineers and the so-called projection-type receivers, which are now appearing on the market in greater numbers, may be the answer to this problem.

Television, in many cases, is changing the normal routine of many American families. The Research Department of Cone, Foote and Belding, New York advertising agency, released the findings of an important study last June which showed:

> Three-fourths of the set owners interviewed are spending more evenings at home now.
>
> Slightly more than half are going to the movies less often, although formerly they were confirmed and in many cases very heavy movie goers.

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[18] Op. Cit., p. 4.

> Age of the set did not appear to have any relationship to reported changes in movie-going habits, which tends to discount the theory that television's effect on evenings out will diminish as the novelty of the new set wears off.[19]

The Cone, Foote and Belding study is verified by a July 1948 study compiled by the Television Research Bureau of Hofstra College, New York. They found:

> a. Total participation in entertainments outside the home declined 24 per cent. Movie attendance is off 20 per cent, with 59 per cent of the television families reporting that they now attend less than before getting their set. The decline is greatest in the middle-class economic group; from the highest rate of attendance, they drop to the lowest.
>
> b. Among entertainments in the home, radio listening is most seriously hit, the hourse of listening dropping 26 per cent for daytime, 68 per cent for nighttime. Reading suffers less, with a drop in hours of only 18 per cent; there is no shift in the proportion of time devoted to newspapers, magazines and books.[20]

According to Ed James, writing in the March 1948 issue of The American Magazine, the Los Angeles study of television set owners disclosed that they had decreased not only their listening to the radio and traipsing to the movies, but their attendance at sports events as well.[21]

The first report on "The Television Audience of Today," which was released by Advertest Research of Newark, New Jersey, in November 1948 further substantiates the foregoing pages.[22]

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[19] Telestatus report in Broadcasting Magazine, p. 16, June 14, 1948.

[20] Thomas E. Coffin, Television's Effects on the Family's Activities (New York: Hofstra College, 1948) p. ii.

[21] Ed James, "Will Television Steal the Show?", The American Magazine, p. 45, March 1948.

[22] First report, "The Television Audience of Today," (Newark: Advertest, 1948).

SUMMARY

From the foregoing pages it is apparent that scientific methods of television audience research have not as yet been placed in full operation. However, there is much information about the viewing audience, which can be helpful to those engaged in building public service programs. It also is evident that the most effective means for obtaining data on the television audience is through direct questioning via mail or by personal interview. With television expanding so rapidly, it is unfortunate that television operators have not been able to catalog all the owners of television receivers as they purchase their sets. If a running file could be kept on these video set owners, the polling methods could be simplified and made less costly to all concerned.

From the scattered studies made thus far, it is evident:

1. The majority of television receivers are in homes (80 per cent).
2. The majority of receivers are owned by the middle-income group.
3. The average television receiver has 3.54 viewers.
4. Most persons use their television sets seventeen hours weekly and the time is increasing as the stations extend their hours of operation.
5. Variety, vaudeville and comedy shows are the most popular type of programs with viewers throughout the year.

6. Over 11 per cent of the television audience prefer educational-type programs.
7. Studies show that television owners want new and better motion pictures available to them at home.
8. Most television set owners are satisfied with the programs being presented at the present time.
9. Most people want their education simplified, if not sugar-coated on television.
10. "Eye fatigue" is still a problem with many television set owners.
11. Television is cutting down on the movie-going in many families.
12. Television cuts heavily into the radio listening in the same home.
13. Reading in television homes is off 18 per cent.
14. Television does not affect the time given over to reading newspapers, magazines and books.

> Television's great future is in the home. Scientifically it may be perfect, but that is only part of it. Success depends upon the perfection of television as an art in entertainment, public events and education. It's the program that counts.
>
> Television planners know this. They know they must mobilize showmanship and make television "the greatest show on earth.[23]

Television may well be education's "second chance." It must not fail this time. A good deal is known about the tele-

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[23] Orrin E. Dunlap, Jr., The Future of Television, (New York: Harper and Brothers, 1947), p. 46.

vision audience. More must be learned at an early date. This is the challenge to educators today.

CHAPTER V

OPINIONS OF BROADCASTERS AND EDUCATORS ON THE PROBLEM

On the pages which follow the writer will present the views of many leaders in the industry and in the field of education on the possibilities of television becoming an effective educational tool. From a consideration of their collective views, the writer will endeavor to determine their relative points of agreement together with their points of difference which might influence a long-range policy on educational television.

IN THE INDUSTRY

It might be well to start a consideration of this phase by quoting General David Sarnoff, President of the Radio Corporation of America and Chairman of the Board, National Broadcasting Company. General Sarnoff, who rose from a wireless operator to head of the Radio Corporation of America, envisaged in 1916 the "radio music box" which later became known as a receiving set and is now in 89 per cent of the homes of America. He has been quoted several times on the public service prospects of television, one of the most recent being in The American Magazine. General Sarnoff wrote in part:

> Sight broadcasting is certain to have a terrific impact on entertainment, education, politics, and

industry. Movie-mansion operators face a new competitor in the home television set. Theater-screen television may provide the answer.

Educators will find the scanning screen a valuable new tool. For example, doctors attending the recent congress of the American College of Physicians in New York "sat in" on operations at a local hospital without leaving their hotel. One prominent surgeon afterward exclaimed, "This is a teaching medium that surpasses anything we have ever had!"[1]

On another occasion, Sarnoff said of television:

> It is a new art so important in its implications that it is bound to affect all society. It is an art which shines like a torch of hope in a troubled world. It is a creative force which we must learn to utilize for the benefit of all mankind.[2]

Noran Kersta, then Television Manager for the National Broadcasting Company, had this to say:

> Television is one of the most powerful means of mass communication ever devised, both in the home and the classroom.[3]

Gilbert Seldes, Director of Television for the Columbia Broadcasting System during the war years, told the writer that he expects television to go heavily for serious programs and not be dominated entirely by entertainment.

Capt. William C. Eddy, a pioneer in television engineering, writes:

> If television is to take its proper place in the scheme of our postwar world, it will need to prove that it can satisfy a definite need in education. This can be done

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[1] David Sarnoff, "Every Chance in the World," The American Magazine, p. 135, April 1948.

[2] Leonard Power, "Television, Challenge to Education," Virginia Journal of Education, p. 257, March 1944.

[3] Ibid.

> by providing a new and effective mode of learning through visual channels.[4]

Lenox R. Lehr, former President of the National Broadcasting Company, had this to say on the problem back in 1940:

> While it appears likely that, as in sound broadcasting, the entertainment aspect will constitute the major appeal, the possibilities in education are especially attractive. True enough, television can never supply the vital give-and-take relationship between student and teacher, nor can it impose the discipline that is so necessary a part of school life. But as a tool to supplement the individual teacher, television has a place in the school that transcends the present high value of sound radio as a teaching aid.[5]

His successor as President of the National Broadcasting Company, Niles Trammell, in a memo to owners of affiliated stations in 1944, wrote:

> Television presents the greatest challenge and the greatest opportunity. Television will open a new era of broadcasting entertainment, information and education to the home.[6]

William S. Paley, Chairman of the Board, Columbia Broadcasting System, said in June 1948:

> Television has arrived to take its place as the newest medium of mass comunication. It may well become the most important. Its evolution as a great popular form of entertainment seems inevitable at the moment; there can be little argument on that score. But, coincidentally, television is obliged to develop its rich potentials as a source of public information.
>
> In the atomic age vast areas of ignorance and misunderstanding cannot be penetrated by the traditional slower methods of mass enlightenment. As an educational

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[4] W. C. Eddy, "Television, The Eyes of Tomorrow," (New York: Prentice-Hall, 1945), p. 284.

[5] Lenox Lehr, "Television Broadcasting," (New York: McGraw-Hill Book Company, 1940), p. 3-4.

[6] Niles Trammell, WBZ Speakers' Guide, p. 12, October 15, 1944.

> force with a clarity matched only by the speed of its dissemination, television has the opportunity to render its greatest service.[7]

The man whose inventive genius changed the entire system of television transmission, Dr. Vladimir K. Zwerykin, with his inventions of the Iconoscope and the Kinescope, has this to say about education via the new medium:

> Television may well change our whole concept of educational techniques....There is no reason why students some day will not get first-hand televised looks at the moon and stars through the giant Palomar telescope, watch important experiments in progress at the world's great research centers, sit in on the actual proceedings at international conferences, or 'attend' any of the firsts in science, exploration and the arts. Famous lecturers and educators could be seen and heard simultaneously in schools all over the country.[8]

It is the opinion of John Ballantyne, President of the Philco Corporation, that television will make great contributions to the public welfare in the field of education. While addressing the first annual conference of the Television Broadcasters Association in 1944, he said:

> By combining sight with sound, television is the ideal medium for the transmittal of ideas and intelligence. It is the next best thing to talking with a teacher face-to-face. Properly used, television can do much to make the people of the United States better informed and more highly educated than ever before.[9]

Members of the Federal Communications Commission, on occasion, have seen fit to cite the educational significance

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[7] William S. Paley, "Furthering Education," The New York Times, June 13, 1948, 10:3.

[8] George H. Waltz, Jr., "Television on the Job," Popular Science, 150:66-72, February 1947.

[9] John Ballantyne, "Television...the Industry with a Future," (New York: First Yearbook of the Television Broadcasters Association, 1944), p. 13.

of television. Charles R. Denny, then Acting Chairman of The Commission, addressed the 1946 convention of the National Association of Broadcasters. During the course of his remarks, Mr. Denny observed:

> We (The F.C.C.) are convinced that the American people want television and that they need television. Television will not be simply a luxury entertainment service. Its educational potential is unlimited. It will be the most powerful communications tool of them all.[10]

While addressing the New York League of Business and Professional Women's Clubs in October 1948, soon after becoming a member of the Federal Communications Commission, Miss Frieda Hennock said of television:

> News, culture, amusement and education will be as readily available to the home as the out side. Unlike many other modern inventions which provide opportunities or incentives to leave the home for greater fields, it will have the effect of bringing the family together.[11]

Even technical radio publications have expressed an opinion on the subject. Radio News declared editorially:

> Let us understand that television will affect all of us quite directly. It will change our economic conditions, our social lives and even the education of our children.[12]

A realization of the educational potentialities of television has been expressed by industry representatives from

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10 The Televisor (article in), p. 3, November-December.

11 Article in Radio and Television Daily, p. 1, Oct. 11, 1948.

12 From an editorial, Radio News, March 1944.

coast-to-coast. Only a few have been reported herein; however, John F. Royal, National Broadcasting Company Vice-President in Charge of Television, summarized all his associates' opinions when addressing the opening session of the Television Broadcasters Association in 1944. At that time he urged members to develop a program code which would guarantee the presenting of clean programs so that the television industry would be controlled from within, thus preventing attacks from without the industry. Regarding education, Mr. Royal said:

> May I suggest that the T.B.A., at a proper time, make a suitable expression of policy on public service programs, including education and religion. In this field our opportunities are greatest. By the proper use of television in cooperation with educational and religious groups, we can raise the intellectual standard of our people, and progress in science and health can be brought into remote places. Our potentialities are unlimited. Success in this field will depend not so much upon what is done, but the way in which it is done. Our responsibilities in public service will be great, and we should meet them unselfishly and without compromise. As you probably know, colleges and schools throughout the country are making ambitious plans for television study and the establishment of workshops. I feel we will do well to cooperate with these activities as far as we can practicably do so.[13]

Robert B. Child of station WRGB in Schenectady, New York, told a gathering at the 1946 Institute for Education by Radio in Columbus, Ohio, that television means more than radio does to education. Radio is basically speech and music. Television is that plus drama and demonstration...

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13 Television News, a release issued by N.B.C., New York, December 11, 1944.

The possibilities of using television in education are endless.[14]

Charles Underhill, CBS-TV Director of Programs, while addressing the CBS Television Clinic in New York, January 21, 1949, said:

> It is the job of television to raise the sights of its home audience by the development of a variety of programs, inspirational material, educational subject matter, drama, comedy, music, news and sports. If we will weigh every program against that broad concept of what our job is, we will come closer to satisfactory fulfillment of our responsibility.[15]

Chairman Wayne Coy of the F-C-C, addressed a joint meeting of the Advertising Club of Boston and the Radio Executives Club on January 25, 1949, and reported:

> There is a hunger among all Americans to enjoy educational, cultural and entertainment programs via television. This is a challenge to television station owners who must create good programs.[16]

While commenting on the foresight and courage shown by Johns Hopkins University in entering television with a weekly program, Radio Editor Jack Gould of the New York Times, wrote:

> While the educational potentialities of television have been self-evident since the earliest days of the art, comparatively little has been done in the field on a regular basis....No doubt "Science Review" is

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[14] Weekly Newsletter on Television issued to T.B.A. Members, May 5, 1946.

[15] Press release, Columbia Broadcasting System, New York, January 21, 1949.

[16] Press Release, Advertising Club of Boston, January 25, 1949.

> laboring under the budget limitations common to most sustaining programs, but, as it stands now, the Johns Hopkins series lacks pace and has too much of the ivory tower motif.[17]

IN THE FIELD OF EDUCATION

Leaders of the television industry and representatives of educational broadcasting met at the Ohio State Institute for Education by Radio in 1946 and during a symposium they agreed that television will greatly expand educational horizons.

Wallace S. Moreland, Chairman of the Television Broadcasters Association committee on education and Assistant to the President of Rutgers University, observed that television offers the broadcaster and the educator the largest opportunity and the stiffest challenge they have faced in their long experience as partners in the production of educational radio programs.[18]

At the same session, Edward Stasheff, in charge of television development for the New York City Board of Education, observed:

> Television has begun to mean a new opportunity for educators, an opportunity to share in the experimentation necessary to develop the new medium, and to contribute to the shape of things to come...It means the extension of three horizons--classroom, teacher and broadcaster.[19]

Nathan Rudich, Production Manager of WNYC, in charge

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[17] Jack Gould, New York Times, Sunday, January 16, 1949.

[18] Weekly Newsletter on Television issued to T.B.A. members, May 5, 1946.

[19] Ibid.

of television production at the New School for Social Research, told this same gathering that these are days of positive planning for education's participation in the growth of the most powerful of the mass communicative arts--television... If education is to succeed in television, he believes, it must learn to apply "showmanship" in the presentation of its materials.[20]

The late Dr. James Rowland Angell, President-Emeritus of Yale University, and Public Service Counselor for the National Broadcasting Company, envisioned television extending the public's cultural horizons as the four walls of the classroom are literally removed.

> Television is approaching the school as did stereopticon, the movies, the phonograph, radio and public-address system, as a new teaching aid. In telecasting, however, the element in its favor is timeliness in establishing contacts between the classroom and the world outside. To succeed, it must accomplish something the other tools of education cannot; the key is pictures as they happen, and mass teaching in which television becomes a giant blackboard. It brings to the public school system a central platform from which the best teachers may reach millions of students in a single lecture. It standardizes the lesson, affords equal opportunity in learning and saves time for the teacher. It will be found that the "T" in teaching stands for television.[21]

correct quote ?

William B. Levenson, Assistant Superintendent of Schools in Cleveland, Ohio, and former President of the Association for Education by Radio, offers a word of warning:

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[20] Ibid.

[21] Orrin E. Dunlap, Jr., The Future of Television (New York: Harper and Brothers, 1947), pp. 147-148.

> The use of television will provide the teacher with a potentially effective service, but at the same time she will be confronted with an additional responsibility. If sight and sound plus actuality and color can enhance the emotional effect of the entertainer and the teacher they can do the same for the demagogue. If television can more effectively spread knowledge, it can more effectively spread propaganda. The need for discrimination will be greater than ever.[22]

A. W. Vandermeer of Pennsylvania State College is another educator to view television with caution. He states that television is to the educational world as atomic energy is to the world of power--simultaneously a potentially messianic instrument for good and an unimaginable means for destruction.[23]

So much for the in-school phase of educational television. Dr. Karl Taylor Compton, then President of the Massachusetts Institute of Technology, said last February:

> As television becomes generally available to supplement the more conventional radio voice, then adult education can be carried on almost as if in the classroom. This is especially true in the fields of science, engineering, architecture, because there is nothing that is easier to show by television than diagrams or mathematical equations or chemical formulae drawn on the blackboard, or experiments performed on the lecture table to illustrate the message of the lecture. These modern techniques, therefore, make it possible to bring the most skilled teachers, with their messages of instruction or inspiration, directly into the home, where not only the young man or woman, but the whole family, can follow the program with interest. By these techniques the contribution of the colleges can be extended far beyond their regular students, and made available to all persons who may be interested to sit, look, listen and think.[24]

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[22] William B. Levenson, Teaching Through Radio (New York: Farrar and Rinehart, 1945) p. 457.

[23] A. W. Vandermeer, "From Textbook to Movie to Television," Elementary School Journal, 48:276-279, January, 1948.

[24] Quoted from "The Colleges and Education by Radio," broadcast by WHDH, Boston, February 1, 1948.

Dr. John W. Studebaker, then United States Commissioner of Education, stated:

> There is one teaching application for which I believe television will offer a distinct advantage over other media of communication, namely, the actual visual demonstration of the successive steps in a procedural sequence. I refer, specifically, to such demonstrations as the mixing of ingredients for making a cake, the development of mathematical formulae, the methodology of chemical analysis or synthesis, and the techniques of machine operation.[25]

Miss Dorothy Blackwell, Assistant Director of the Audio-Visual Division of the St. Louis schools has described her experiences with television thusly:

> Television is the shorthand method of learning--the poor man's college. But we must not judge television by what we see today. It can bring fine art work into the classrooms. News broadcasts will be better. We can no longer say 'manana' on television in the schools. The 'manana' is here.[26]

"TV is a medium through which every type of college activity can be illustrated," wrote Dr. Lyman D. Poole,[27] Director of Public Relations at Johns Hopkins University.

> "As public relations directors, we must examine this new medium and be ready to become an integral part of it. Because already television has millions of devotees, has proved itself to be a powerful means for transmission of information, a dramatic vehicle for moulding public opinion--and it can be a vital instrument in expanding culture and general education."

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[25] Dr. John W. Studebaker, "Television as a Medium of Education," First Yearbook of the Television Broadcasters Association, New York, 1944, p. 49.

[26] "St. Loo Schools Seek Bigger TV Fund," *Variety*, p. 26, January 12, 1949.

[27] Lyman D. Poole, "Television--The New Challenge," College Public Relations, American College Public Relations Association monthly publication, January 1949.

SUMMARY

It would appear from the foregoing pages that commercial broadcasters and educators are in complete agreement on the unlimited possibilities for education by television. However, it is also apparent that the statements by the broadcasters are in more general terms than those of the educators, except in the case of Mr. Royal who urged the Television Broadcasters Association to incorporate a policy of cooperation with educational groups in their proposed industry code. This tendency toward abstractions may be partly attributed to the fact that the television industry has not settled down to a permanent form, and, as a result, the spokesmen for the telecasters do not want to be committed to policy on educational programming until some later time.

It also is of importance to note that the educators, for the most part, are advocating that television present much of the classroom type of material just carried over onto the new medium without regard for any new techniques of telecasting public service programs.

Another factor worth noticing is that few of the recognized leaders in educational broadcasting have committed themselves on the possibilities of extending their work into the video field. This may be due to the amount of time and effort which they have to put into aural programs to the exclusion of any experimenting with television techniques. Still, it also is likely that they do not want to go on

record until the video field has "shaken down" to a point where more conservative educational claims can be made, and within a period of months be substantiated through various methods of research.

CHAPTER VI

TELEVISION EXPERIENCES OF SCHOOLS AND COLLEGES

It is the intention of this part of the study to consider the role of universities, colleges, and schools in the expanding field of television to the present. The writer will endeavor to show:

1. The earliest programming contributions by American colleges.
2. The more recent efforts by American colleges.
3. The results of a special survey conducted by the writer among the 26 standard non-commercial radio stations as to their future plans for using television.
4. The programming efforts of school systems.
5. The limited efforts at utilizing these programs for in-school viewing.

> Educational television broadcasting started at the State University of Iowa in 1932 and continued until 1940, Carl H. Menzer, of Station WSUI, Station University of Iowa, reported. The pictures were broadcast from Station W9XK and the accompanying sound from the regular broadcasting station WSUI. The list of subjects covered included shorthand, drawing, dramatized children's stories, boy scout programs, character sketches, dramatized poetry, and so on.
>
> Mr. Menzer said that there have been no regular television broadcasts since 1940 when the installation of electronic equipment was started. Television, however, has been used for laboratory experiments and in the

Boston University
School of Education
Library

> development of a television script by a candidate for a graduate degree. The State University of Iowa retains its television license and will, in all probability, continue broadcasting after the war when equipment is available. Consideration has been given to a state educational television net work, but the present estimated costs indicate the expense of such a network would be prohibitive, since the limited range of a single station would not include a great number of the receivers in this particular area as compared with those in a large metropolitan area.[1]

The State University of Iowa, as noted above, was one of the pioneers in educational uses for television. The institution entered the field in the days of the old-type scanning disc, which was replaced entirely by the electronic method now in general use for all television transmissions.

Purdue, Kansas State, and St. Louis University were other institutions to experiment with the scanning disc method of television prior to 1940, although none of these collegiate groups operated on the scale of the State University of Iowa. E. B. Kurtz, reporting in Education on the Air, 1934 edition, presented the following list of topics as being televised by Iowa during 1932-1933:

> Oral hygiene---Dentistry Department, illustrating correct method of brushing teeth.
>
> Identifying trees--Botany Department, leaves used for identification.
>
> Trail marking Girl Scout lecture---diagrams of trail markings.

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[1] Education on the Air, Fifteenth Yearbook of the Institute for Education by Radio (Columbus, Ohio State University, 1944), p. 252.

Spring Birds---Museum, mounted animals shown

The Constellations---Astronomy Department, diagrams of constellations shown.

Graded art lessons series---Art Department, elementary art taught and illustrated.

Charcoal sketching---Art Department, portrait drawing during discussion.

Reading Architectural-Engineering Drawings---symbols used and detail drawings shown.

Equilibrium---Physics Department, diagrams and models used.

French Pronunciation---Romance Languages Department, speaker illustrated lip and tongue movements.

Other engineering schools built mechanical scanning disc television transmitters during this same period. However, they were primarily interested in the problems of technical construction, and no efforts were made to program these television stations.

The high costs of transferring to the new electronic method of transmission, together with a shortage of equipment and the approaching of World War II, resulted in a complete cessation of educational television station activity during the present decade. Frederick Kugel, publisher of Television Magazine, made a survey in 1945 to determine the experiences of American colleges and universities with television. He found that approximately eight institutions of

higher education had applied for television licenses or had been working directly with commercial television stations. The Kugel survey sets forth the following digest:

> Application for a station construction permit:
> The State University of Iowa, Iowa City, Iowa
> Cornell University, Ithaca, New York
>
> Early experimental television station experience:
> Kansas State College of Agriculture and Applied Science, Manhattan, Kansas
> Purdue University, Lafayette, Indiana
> St. Louis University, St. Louis, Missouri
>
> Some television experience (mostly with commercial stations):
> Columbia University, New York City, New York
> University of California at Los Angeles, California
> Georgia School of Technology, Atlanta, Georgia

According to Robert D. Hilgendorf, program supervisor, Station KSAC, writing in the National Association of Educational Broadcasters NEWS-LETTER, Kansas State College is in the midst of a project that will be of wide interest in the television field.

> Realizing that the cost of construction and operation is one of the factors in the development of television, Kansas State's department of Electrical Engineering headed by Prof. R. G. Kloeffler, is testing the feasibility of providing television service with a low power transmitter to a small community, at a reasonable cost.
>
> With this objective in mind, members of the Electrical Engineering faculty and graduate students in the department have built the transmitting and pick-up equipment of the College's experimental television station, WXBV, from war surplus and college gift material.
>
> In addition, the station provides research projects for graduate students in Electrical Engineering. And it provides laboratory facilities for use with a four-hour television course offered by the department.

WXBV is licensed to operate with a peak power of 400 watts, but the maximum power is not being utilized at this time. The effective radius of its signal is about seven miles.

Operation thus far has been limited to experimental work. Most programs televised have been aimed at specific audiences and have been quite informal. One such program was presented recently as a demonstration for a group of Kansas newspaper editors meeting at Kansas State.

Plans calls for the addition in the immediate future of a movie projector so that 16-mm educational films can be added to the live programs. Journalism and radio speech departments at Kansas State are studying the possibilities of adding courses in television programming and television news to acquaint students with television techniques. The Kansas Extension Service plans to experiment in the field of adult education work through the video medium.

Kansas State first began work in television as a project of its Engineering Experiment Station and the work has continued to date as a project of this branch of the college. Construction of equipment was among the early projects of the Electrical Engineering department in that field. In 1932, the college was granted an experimental license and began television programs in that year, continuing until 1940. The war brought a halt to activities temporarily, but construction of a new station was begun after V-J day and in February, 1948, a new experimental license was granted.[2]

Richard B. Hull, President of the National Association of Educational Broadcasters, recently informed the writer that the extensive television experimental operations of Kansas State College are aimed at finding ways and means of serving small communities through the new medium. He also pointed out that Michigan State College, the University of Michigan, and Rutgers University have all done experimental

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[2] NAEB News-Letter, issued by National Association of Educational Broadcasters, Lafayette, Indiana, December 1, 1948.

television productions for commercial stations. American University has a formal arrangement with the Dumont television station in Washington, D. C., while Creighton University in Omaha, Nebraska, is doing all the developmental production work for WOW-TV, the National Broadcasting Company outlet in that city.

> Creighton University inaugurated its cooperative television experiments with WOW, local NBC outlet, in December (1946) when the station installed complete television equipment in the University auditorium. Two image-orthicon cameras with control units, power supplies, and switching unit were installed along with several ten-inch receivers. For the present, none of the programs will be broadcast; they will be carried only by coaxial cable to the receivers in the auditorium and in other buildings on the campus. The central location of the auditorium, however, will permit wide experiments with both cameras and receivers in the various schools on the Hilltop campus.[3]

The writer had a lengthy discussion with the Reverend Father Williams during the 1948 Institute for Education by Radio at Ohio State. The Creighton educator was enthusiastic over the achievements of the cooperation with WOW-TV. He said their experiments in televising lessons in foreign languages had been eminently successful, particularly in the case of Spanish instructions. Graphic arts series were planned on the adult education level. A model village was used in certain of the programs and a science series was developed with the effective use of a microscopic projector. It is Father Williams' opinion that picturization is fundamental

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[3] Rev. R. C. Williams, S.J., Acting Director of Radio Education, Creighton University, The Journal of the AER, p. 99, February 1947.

in the successful presentation of education over television as against the customary lecture methods.

Another experimental educational program was worked out at the University of Nebraska by the WOW-TV crew in February 1948. It was a documentary entitled "Man's Best Food--Milk." The story explained the advantages of pasteurized milk over the raw product, and the need for home pasteurization in the rural home. The dramatic skit was preceded by a milk-cooling demonstration by two 4-H Club members. This program was not broadcast but was transmitted from the basement studios to the first floor auditorium at the University where three performances were presented for the faculty, students, and their invited guests.

When the first commercial television station opened in Cleveland in January 1948, Western Reserve University began presenting programs of various types. Barclay S. Leathem, Chairman of the Department of Dramatic Arts, Western Reserve University, has been in charge of these telecasts over station WEWS. In reply to a letter from the writer, Leathem reported presenting approximately twenty television programs in six months after the station opened. The television activity was carried on without additions to the teaching staff, and there has been no opportunity for those in charge to assemble a record of their television experiments.

A few other colleges and universities have been carrying on television program experiments in cooperation with com-

mercial stations. These are explained in detail elsewhere in this study.

When the present Frequency Modulation (FM) bands were allocated, the nation's educators asked for, and received, reservation of certain channels for school use, but once the facilities were set aside, the educators were not over anxious to make use of them. Now, in television, the situation is reversed.

> Dr. Harold C. Hunt, General Superintendent of the Chicago Public Schools, has received the following communications from Mr. T. J. Slowie, Secretary of the Federal Communications Commission: "This will reply to your letter of November 16, 1948, inquiring what consideration has been or will be given to educational groups desiring to operate their own television stations.
>
> "The Commission does not have under consideration any proposal to reserve any channels for the exclusive use of educational stations. Educational organizations are eligible, of course, to compete with other applicants for the available commercial channels."
>
> At the reallocation hearings which will be held in Washington in the near future, the National Association of Educational Broadcasters, the Association for Education by Radio, and the Association of Land Grant Colleges are presenting resolutions to the FCC asking what certain TV channels be reserved for educational purposes. Such a reservation was made in the FM band, but the FCC is reported to have been disappointed in the fact that educators have not been too quick to avail themselves of the facilities set aside for them.[4]

Hull reports that Iowa State College at Ames, Iowa, holds a construction permit for a regular television station, and is now constructing a tower and transmitter house facilities. Final operating plans will be made in the near future.

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[4] NAEB News-Letter, issued by National Association of Educational Broadcasters, Lafayette, Indiana, December 1, 1948.

The station will operate on channel IV, with power of 5000 watts, and a tower 580 feet high. Kansas State College is the only other educational group to hold a television construction permit, although their license is for an experimental station.

A status report on educational television stations was published by the National Association of Educational Broadcasters, on December 1, 1948,[5] and shows four applications pending before the Federal Communications Commision from the following:

Cornell University, Ithaca, New York
Harding College, Memphis, Tennessee
Concordia College (Missouri Synod) St. Louis, Missouri
State University of Iowa, Iowa City, Iowa

There are two industry organizations working for the advancement of television. Both have similar objectives, and in recent months have been working closely together to solve some of the problems in the field. The Television Broadcasters Association, Inc., is the larger of these trade organizations, whose functions follow:

> Founded in January 1944, as a non-profit organization of television broadcasters and others engaged in any business directly connected with television broadcasting. Objects are to foster and promote the development of the art of television broadcasting; to protect its members in every lawful and proper manner; to foster, encourage and promote laws, rules, regulations, customs and practices which will be in the best interests of the public; to protect the interests of the members of the Association by opposing the enactment or adoption

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[5] *Ibid.*

> of any laws, rules, regulations, customs or practices which would discriminate against or in any way injure the members of this Association.[6]

The second organization is the American Television Society, whose functions follow:

> American Television Society is a non-profit group organized to foster the study, understanding and appreciation of television as a cultural, educational, entertainment and advertising medium. It provides its members with an intelligence center and clearing house for information pertaining to television and its development; a forum for the exchange of ideas and discussion of mutual problems relating to or affecting television; a television library; special meetings for the dissemination of television information; and the opportunity to view and study television technique.[7]

The Television Broadcasters Association, which includes in its membership most of the commercial television broadcasters as well as nine educational institutions, is extremely active. Members of their educational division include the following:

Yale University
Rutgers University
Syracuse University
Western Reserve University
Capitol Radio Engineering Institute
New York Technical Institute of New Jersey
Television Workshop
Central Radio and Television
National Radio Institute

In the fall of 1946 the Television Broadcasters Association named a Committee on Education of which the chairman was Wallace S. Moreland of Rutgers University. On January 6,

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[6] Radio Annual (New York, Radio Daily, 1948) p. 1007.

[7] Op. Cit., p. 996.

1947, the committee announced a six-point plan for the group, as follows:

1. To keep educators accurately informed on new developments in the field.
2. To aid in developing educational and other forms of public service programs for television stations.
3. To stimulate the use of television programs in the classroom.
4. To suggest standards for teaching television programming and engineering.
5. To encourage research in the field of educational television.
6. To develop cooperative activity of educational organizations that might reasonably be interested in television development.

On a visit to the Television Broadcasters Association headquarters in New York City, the writer found little had been achieved by the Committee on Education beyond setting forth its objectives. These purposes were restated in June 1948, by Will Baltin, Secretary-Treasurer of The Association and the new Committee chairman, Dean Kenneth Bartlett of Syracuse University.

On the same trip, the writer talked with Charles J. Durban, President of the American Television Society, who explained that directors of his organization have been assisting with television classes at the City College of

New York, New York University and Columbia University. Directors also have lectured frequently to drama classes at Yale University and Fordham University.

Several colleges and universities are offering courses in television, but the writer found in a preliminary study made in 1945 that these courses were just as varied as their names. In talking with several representatives from the television industry over a two-year period it was the concensus that it was too early for television courses, other than introductory or survey types, to be offered in colleges and universities. They were unanimous in the belief that the best training was available only by actually working with the medium in a studio situation. It is for this reason that the writer has made no special effort to study and evaluate this phase of the television activity of twenty institutions of higher learning as reported in Broadcasting Yearbook.[8]

Reverting to the conventional types of educational broadcasting for the moment, Charles A. Siepmann writes that the story of educational radio stations is, at worst, one of sheer professional incompetence. He adds:

> At best, it is a record of a courageous struggle against hopeless odds. The muddled thinking about radio of many educators, the unhappy influence of politics, the oppostition of commercial broadcasters--these and other influences have contributed to a sorry

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[8] Colleges and Universities Offering Courses in Radio, Broadcasting Yearbook for 1947, p. 523.

QUESTIONNAIRE FOR

EDUCATIONAL BROADCASTING GROUPS

Name of Institution ______________________________

1. Has your institution presented any television programs? (Please check)

   Yes _____ No _____

2. If your answer to number one above was "Yes," please describe briefly types of telecasts, when presented, and name of station.

   ____

   ____

   ____

   (Use reverse side if additional space is needed)

3. Were these telecasts presented as: (Please check)

   Single Program _____ Series of Programs _____

4. If your answer to number one above was "No," have you definitely planned for television by: (Please check statements which apply to your institution)

   _____ a. Building educational "package shows"

   _____ b. Building conventional public service programs

   _____ c. Cooperating with commercial television stations

   _____ d. Teaching TV courses in regular curriculum

   _____ e. Seeking an educational TV station license

5. Do you believe that educational television programs should accept limited sponsorships, such as banks, insurance companies, book publishers, etc.

   Yes _____ No _____

A DIGEST OF THE RESULTS FROM THIS STUDY WILL BE MAILED TO YOU BY FEBRUARY 15, 1949. Please fill out and return promptly.

TO: George W. Slade
105 Gleason Road
Lexington, Mass.

story. Twenty years ago there 176 educational stations. Today only 30 are left.[9]

To determine the future plans which this small number of regular educational stations may have for the future use of television, the writer prepared a simple questionnaire containing only five questions. These were mailed, together with a brief letter of explanation, to the twenty-six "Non-Commercial AM Educational Outlets" as listed on page 117 in the Radio Annual for 1948. These questionnaires were mailed out on December 15, 1948, together with a self-addressed stamped envelope.

There was a 77 per cent return on the questionnaire, and the study brought forth some interesting facts on college, university, school and religious groups who have been broadcasting over their own facilities for many years and may be faced with a need for turning to television within a few years.

In answer to Question One: Has your institution presented any television programs?

Of the sixteen educational institutions replying, thirteen answered in the negative, and only three reported affirmatively. Those answering "yes" were the State University of Iowa, Kansas State College and Michigan State College.

Of the four religious groups answering Question One, only

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[9] Charles A. Siepmann, Radio's Second Chance (Boston: Little, Brown & Co., 1946), pp. 270-271.

one reported having presented any television programs. The Evangelical Lutheran Synod at Clayton, Missouri, reported having presented two telecasts over KSD-TV in St. Louis during 1947 and 1948.

In answer to Question Two: If your answer to number one above was "Yes," please describe briefly types of telecasts, when presented, and name of station.

The three educational institutions answering affirmatively the previous question, explained their answers as follows:

The State University of Iowa at Iowa City presented various types of programs by the mechanical scanning method, 1932-1938, over their own television station and their amplitude modulation station WSUI.

Kansas State College at Manhattan has presented special telecasts for conventions, conferences, etc., by experimental station WQXBV, owned and operated by the Department of Electrical Engineering.

Michigan State College at East Lansing presented an hour-long documentary about the College, part with films, part with interviews with college officials, and part with dramatization of college activities by students, over commercial television station WWJ-TV in Detroit.

The one religious station to have television experience was the Evangelical Lutheran Synod at Clayton, Missouri, which presented special programs, Christmas, 1947, and Good Friday,

1948, over commercial television station KSD-TV in St. Louis.

In answer to Question Three: Were these telecasts presented as single programs or as a series of programs?

Three reported their television efforts were single programs, while only in the case of the State University of Iowa were they presented as a series of telecasts.

In answer to Question Four: Have you definitely planned for television by the following:

a. Building educational "package shows" (based on courses)

b. Building conventional public service programs (stressing public relations factors).

c. Cooperating with commercial television stations.

d. Teaching television courses in regular curriculum.

e. Seeking an educational television station license.

There was a surprisingly small response to this section of the questionnaire.

Under subdivision a (building educational "package shows"), only the non-commercial station owned and operated by the City of New York appeared interested in this phase of planning.

Under subdivision b (building conventional public service programs), the City of New York station was the only one planning this type of activity.

Under subdivision c (cooperating with commercial television stations) the City of New York station again was the only group planning such a project. The Evangelical Lutheran Synod in Clayton, Missouri, planned similar cooperation as

the only religious group.

Under subdivision d (teaching television courses in regular curriculum) as was to be expected, both The State University of Iowa and Kansas State College have definite plans along this line.

Under subdivision e (seeking an educational television station license) three of the educational groups answered in the affirmative. They were the City of New York, the State University of Iowa, and Iowa State College. The Evangelical Lutheran Synod also reported it is seeking a television license of its own.

In answer to Question Five: Do you believe that educational television programs should accept limited sponsorships, such as banks, insurance companies, book publishers, etc.?

Of the sixteen educational station licensees responding, eight definitely were against this form of sponsorship of educational television. Four colleges and universities were in favor of such sponsorship. The spokesmen for two other college stations expressed strong doubts as to the stand their institutions might take on such a question, while two other questionnaires left this question blank.

Two of the four religious groups favored sponsorship of educational television. One was opposed, and the other questionnaire was blank.

Although many independent school groups have appeared on television, the New York and Chicago Boards of Education

were the first to embark on definite program series in cooperation with commercial stations in their respective cities. The New York experiments started in February 1945, over the Columbia Network's television station.

Edward Stasheff, Director of Television Development, Station WNYE, New York Board of Education, now a member of the station WPIX staff, in explaining the early experiences of the New York schools in television, wrote:

> Perhaps it would be well to begin with the organization of television work in our city's schools. Television is under the general supervision of an Associate Superintendent, to whom report the seven members of our Television Committee. The Coordinator of Broadcasts is chairman of the committee, with the city-wide Science Supervisor, as co-chairman. Two other members of the WNYE staff serve on the committee, as do one representative each of the elementary, junior high and vocational high school divisions. Plans for new programs clear through this committee and then are referred to the Board of Superintendents for final approval. Then, actual field supervision of the telecasts themselves is placed usually in the hands of three committee members, who follow through on the broadcasts, occasionally "spelled" by other members when the schedule grows too heavy.[10]

Stasheff sets forth two "musts" for those planning school telecasts based upon the experiences of the New York group, as follows:

1. There must be close cooperation between the professional broadcaster and the educator, with a mutual understanding of each other's problems and common purpose.. the creation of educational broadcasts which are pedagogically sound yet "entertaining and attractive."

2. There must be careful consideration of the format to

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[10] Edward Stasheff, Experiments in Educational Institutions, The Journal of the AER, p. 94, February 1947.

be used to present the materials and the performer in the most effective manner possible.

Descriptions of the television programs presented by the New York Board of Education thus far follow:

> There Ought to be a Law had a format based on informal debate, with each speaker limited to a minute's discussion on the pros and cons of the topic. Edward Stasheff acted as moderator, calling on the children, cutting them short if they started to wander, in keeping with his pre-show instructions. Subjects ranged from serious problems of the day, such as compulsory military training, to the more comic "tragedies of youth," such as boys asking girls to dance at school affairs. Keynote of program was one of naturalness, with the children encouraged to heckle each other.[11]

This series won the Joint Award of the American Television Society as "the year's best educational program" in the nation for 1945-1946.

> One Strike, You're Out was a quiz show played along the lines of verbal baseball. A miniature diamond was marked out on the studio floor, with color added by rooters, cheer leaders, etc. The umpire acted as the quiz master. Two teams of five each from different schools competed in the quiz which consisted of stunts, guessing ideas from sketches, spelling, pronunciation, pantomime, etc. An animated score board, consisting of a miniature diamond and four players, gave the score at all times. Three strikes retired the side. Four games comprised a half-hour show.[12]
>
> Junior High School Quiz had students from two different junior high schools prepare the quiz questions. Their participation was limited to answering questions. Mr. Stasheff kept the show moving swiftly and thus eliminated any awkwardness or amateurishness on the part of the children competing in the program.[13]

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[11] Schools as a Source for Local Programming, Television, p. 14, April 1946.

[12] Ibid.

[13] Educational, Television, p. 27, March 1947.

These were all worked out by the New York Board of Education in cooperation with the Columbia Network television station.

> Your World Tomorrow was a weekly series presented over WNBT by the New York schools. Emphasis was on new scientific developments which directly affected the viewers. Among the first televised programs were "The Mighty Atom," an explanation of atomic power; "Jet Propulsion," and "Huff-Duff, the Radio Detective." Format was flexible to include unusual laboratory demonstrations, dramatization of historical events, outside field pick-ups, including a visit to the Smithsonian Institute in Washington, and extracts from educational motion pictures.[14]

Stasheff, in commenting on his experiences with school children on television, said youngsters seem to be more effective on television when they are allowed to be natural, not when they are expected to compete with professional actors. He also observed that straight educational material seems better received when directed fully at the audience and given the aid of dramatic dialogue, or familiar characters to whom the factual content of the program is important. He concluded that some viewers of television programs resent being transplanted into a classroom situation and suggests guarding against such programming.

One of the more recent cooperative projects was worked out with the National Broadcasting Company. Called the "School of Tomorrow," it was a full-hour program designed to point up the importance of educating the nation's youth

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[14] Schools as a Source for Local Programming, Television, p. 16, April 1946.

in international problems, and was presented on WNBT as a feature of United Nations Week and Audio-Visual Education Week (telecast, October 25, 1948). The program portrayed the success of a typical "pilot" school--the Midwood High School in Brooklyn, New York--which was selected as the outstanding school in New York State in the presentation of new teaching methods by audio-visual means. In "School of Tomorrow," teachers and students presented a classroom scene over television and films were integrated into the program just as they would have been screened in the classroom. This telecast, a one-time only program, received considerable comment from educators and from regular television viewers. It was offered by NBC in cooperation with the National Education Association.

In the Chicago area the Board of Education staff has been working in cooperation with the staff at commercial television station WBKB for several years. The burden has been shouldered chiefly by George Jennings, Director of the Radio Council station WBEZ and by Miss Elizabeth Marshall, program director. Series developing out of this association have included:

> Treasury Hour was the first series worked out to aid in the sale of war savings bonds and stamps. These programs varied each week, including dramatic skits, interviews, original verses and songs, musical talent and other forms of presentation.[15]

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15 Chicago, The Journal of the AER, p. 96, February 1947.

Young Chicago was a high school talent show strictly of the entertainment type, including singing, dancing, puppetry, jugglers, musicians, dramatizations and other typically "teen-age" talent.[16]

A View of Education was a series covering such subjects as social studies, literature, home mechanics, aviation, health habits, radio and FM, radar, fire prevention, commercial art, hobbies, etc. These were planned for different grade levels and integrated with the regular course of study. Incidently, these were sponsored by the American Gear Company.[17]

Hobbies was a series in which 26 students participated as they showed their scientific and educational hobbies. The list included quilt making, floral arrangements of dried plants, model planes, chemistry, wood carving, coin collecting, stamp collecting and mask making. Entertainment note was added by a singing-accordionist.[18]

Community Helpers was a kindergarten series with a teacher quizzing the small children on safety rules with the children singing safety songs and hearing brief talks by policemen and firemen.[19]

Minor Opinions was a series presented in cooperation with the Gary public school system. The format consisted of a current events quiz, with the class made up of six youngsters ranging in age from six to nine years. They gave their viewpoints on such weighty problems as politics, housing, sports, business, education, etc.[20]

The Los Angeles city schools, in cooperation with the Don Lee television station W6XAO, presented a series of educational telecasts starting in the fall of 1946. In the months which followed students were seen in demonstrations of phy-

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[16] Ibid.

[17] Chicago Experiments, Television, p. 16, April 1946.

[18] Ibid.

[19] Ibid.

[20] WBKB, Television, p. 28, January 1947.

sical education, dancing, music, plastics and dramatics. However, this project did not approach in scale the educational telecasting of the New York and Chicago schools.

In the summer of 1948 the Philadelphia Board of Education conducted a Television Workshop for teachers in that city at the invitation of Westinghouse radio station KYW. This was a natural outgrowth of the Radio Workshops conducted for the Philadelphia schools by KYW for several years previously to acquaint teachers with the most effective means of developing and using radio for in-school listening.

On March 11, 1948, School Committeeman Isadore H. Y. Muchnick of Boston called upon the School Department to establish its own television studios and provide the necessary facilities in the various schools so that fashion shows, talks by sports personalities, talks by prominent leaders, might be viewed in the classrooms. Up to the time of this writing, no further action had been taken on the request, and the Boston schools are not working with television in any form although the city has two commercial stations in operation.

According to the January 12, 1949, issue of Variety, Superintendent of Instruction Phil J. Hickey will recommend that increased funds be earmarked for experimental work in television during 1949-1950 for the St. Louis public school children. For the third year the schools are offering a series of television programs twice monthly over station KSD-TV.

> Hickey stated that the instruction department has 'held back' on the purchase of television sets because screens were not large enough for classes of 40 pupils. 'We may ask a little more next year to experiment in television. The question is, how can we use television sets best in the schools? It is a new, overpowering thing.[21]

An application for a television station that may have far-flung consequences will be filed with the F-C-C soon by the Jersey City, New Jersey, Board of Education. The request will be for a low-power transmitting permit to be used primarily for in-school viewing. It would cover only the Hudson County area and would not interfere with any commercial stations.

> The Board is prepared to spend around $150,000, it was reported. There would be no elaborate studio set-up, it was said, beyond the transmitter and cameras. Program material would be direct instruction, such as laboratory demonstrations, films, language lessons, etc. These would be integrated into the high school curriculum, and each would be followed by class-room discussion.
>
> Even before application is filed, the Jersey City Board will get its feet wet in tele via a 12-week lecture and laboratory series on WATV, Newark. Program, to be aired Tuesdays at 4 p.m. beginning Feb. 15, will be a basic video course and students passing an exam to be given at the completion of the series will receive high school credit.
>
> The Board plans also to ask other metropolitan stations for afternoon time for school programs.[22]

The progress made by the public schools with television is best summed up by the Television Magazine of April 1946,

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[21] "St. Loo Schools," Variety, p. 26, January 12, 1949.

[22] "In-School TV Station Planned," Television Daily, p. 7, January 25, 1949.

which stated:

With amateur groups being hailed as one of the answers to television's prayer for good, but easy on the budget talent, such cooperative ventures between the operating stations and the local Boards of Education may well be the answer. But, as the foregoing experiments point out, close attention must be paid to planning the production and rehearsing the cast.

Nothing can make an audience squirm quicker than bungling amateurs. In all types of television programming a smoothly paced show is still a viewer must, whether produced by amateurs or professionals.

Theeducational potentialities of television are also slated for much experimentation on the part of stations and Boards of Education. The work being done by the pioneers should serve as a guide for other cooperative ventures between educators and broadcasters as television studios open around the country.

Owing to the fact that until November 1948, all regular television programming was limited to the evening hours, except over week-ends, there was no opportunity for the in-school use of television. However, to West Hartford, Connecticut, goes the distinction of having received the first television reception of any New England school system in January 1947. This demonstration was worked out in spite of the fact that the nearest television station to West Hartford

was located ninety air miles away.

Richard W. Morton, Audio-Visual Director for the West Hartford schools, reported the experiment in the Journal of the AER in September 1947;

> We feel that we have accomplished most of our objectives, which were principally concerned with bringing our community and school people up to date with specific information about television, its background, how its transmission is accomplished, and the electronic techniques and equipment it requires. We tried to reduce the mystery surrounding the marvelous magic by which television adds eyes to our radio ears.

The high cost of equipment, the amount needed for the average public school building, and the lack of appropriate educational television programs, have combined to keep schools from purchasing receiving sets. However, television was introduced as a permanent part of the regular school program at the Nutley, New Jersey, high school in the early fall of 1947.

> While several schools and school systems have experimented for varying periods of time with borrowed receivers, the Nutley high school will be able to use television as a permanent part of its audio-visual program. A large-screen, direct-view receiver, specially designed for school use, was presented to the Board of Education by Industrial Television, Inc., whose manufacturing plant is in Nutley. The screen and loud-speaker are set up on the stage of the auditorium on a rolling platform which may be moved back into the wings after use.
>
> The first program viewed by a student audience of nearly 1000, included the opening session of the United Nations Assembly at Lake Success.[23]

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[23] Educational Television Developments, The Journal of the AER, p. 35, November, 1947.

SUMMARY

From this chapter it is clear that there will be a few non-commercial educational television stations operating in the United States within the next few years. Other conclusions follow:

1. A majority of the educational telecasting will probably be worked out by college, university and school groups in cooperation with and over the facilities of commercial stations.
2. Over a third of the existing educational broadcasters favor limited sponsorship of educational television programs to help defray production costs which are many times higher than those of regular broadcasting.
3. The New York Board of Education and the Chicago Board of Education have pioneered the way for public school telecasting by working in close cooperation with local commercial stations.
4. Little use has been made of television for in-school use because of (a) limited hours of transmission, (b) limited number of suitable programs and (c) high costs of equipment for receiving programs.
5. The most effective programs for the educational uses of television for in-school purposes can be worked out most economically by enlisting the cooperation of all existing television stations in an area.

CHAPTER VII

STATION AND NETWORK EXPERIENCE WITH EDUCATIONAL TELEVISION

At this point the study considers types of educational and public service programs presented over television stations in this country, in England and in France.

Then follow brief descriptions of the several educational television programs presented in the United States, an analysis of the quantity of such programming offered between April 1947 and December 1948, and a review of trends indicated by the study.

American television stations operate under the authorization of the Federal Communications Commission. While the Commission has published regulations for commercial televistion stations, it has not given any special indication of its feelings about types of program service to be provided by television broadcasters. However, several members of The Commission have stated informally that television program service should be patterned after those of the conventional amplitude modulation (AM) radio station. Such being the case, television station operators should bear in mind the conclusions set forth in the so-called "Blue Book," published by The Commision March 7, 1946.

Licensees acting individually can do much to raise program service standards, and some progress has indeed

> been made. Here and there across the country, some stations have evidenced an increased awareness of the importance of sustaining programs, live programs, and discussion programs. Other stations have eliminated from their own program service the middle commercial, the transcribed commercial, the piling up of commercials, etc. This trend toward self-improvement, if continued, may further buttress the industry against the rising tide of informed and responsible criticism.[1]

A study of earliest experiences by American commercial television stations provides definite indication they were willing to maintain a policy of self-improvement in the newer medium. In fact, when the Commission first permitted American television stations to operate commercially (July 1, 1941), nearly five years before the "Blue Book," the National Broadcasting Company's station, WNBT, New York, presented its initial educational program on television.

Hutchinson[2] describes the first educational program of the commercial television era as being a combination of silent films, talks and discussion. Planned by the National Broadcasting Company in cooperation with the Yale University Press and the Department of Secondary Teachers of the National Education Association, the series presented the famous "Chronicles of America," Yale University film series, which traced America's history from Columbus to the Civil War. Each telecast was supplemented by a talk or discussion in which participated prominent educators, and others.

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[1] "Public Service Responsibility of Broadcast Licensees," (Washington, D.C.: Federal Communications Commission, 1946), p. 55.

[2] J. Raymond Hutchinson, Secondary Education, April-June 1945.

Although there had been several experiments at educational television dating back to 1936, and earlier, the "Chronicles" is said to be the first educational series viewed in this country.

Hubbell[3] reports that the art of television programming had its beginning in England. The British Broadcasting Corporation blazed the first trail, and television operators in other countries patterned their early program efforts after those in England.

From the end of 1936 through August 1939, the British Broadcasting Corporation conducted the first serious efforts to develop program production techniques. Shortly thereafter, limited telecasts were begun in France and Germany. Hubbell[4] reports further that the National Broadcasting Company inaugurated a considered study of the problems of television programming in 1936, followed the next year by the Columbia Broadcasting System. Other television experiments were conducted prior to World War II by Balaban and Katz in Chicago, Don Lee and Television Productions, Inc., in Hollywood, Dumont in New York and Philco in Philadelphia. The General Electric at Schenectady, New York, also was pioneering in the field.

Although the British got the jump on the other countries

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[3] Richard Hubbell, Television Programming and Production (New York: Murray Hill Books, 1945), p. 183.

[4] Op cit., p. v.

television-wise, their operations were suspended throughout World War II while most of the then existing stations in the United States adapted their television program service to the war emergency.

With the coming of peace, service has been resumed, but the American television service has far outstripped the British Broadcasting Corporation in the number of stations, hours of televising and the number of receiving sets available.

Norman Collins, controller of British Television, while on a recent visit to New York reported:

> We've (B.B.C.) got over most of our growing pain and have reached a state of adult complicatedness.
>
> At the moment, B.B.C. has but one television station, in north London. This has a sixty to seventy-mile radius and a potential audience of eleven million viewers, of whom only 61,000 have sets so far. The demand for sets is enormous; the south of England is crying for a million. Only from 5,000 to 6,000 per month can be produced. B.B.C. plans to open a second television station next summer in Sutton Coldfield, near Birmingham, to serve the Midlands, and, later, a third station near Manchester, to serve the north. Scotland and Wales will follow.[5]

According to the British Broadcasting Company Yearbook for 1948, the television "documentary" began to evolve a technique of its own. "I want to be a Doctor" was one of the best examples. Visual talks covered a multitude of topics, including "Radar" explained and demonstrated by its inventor, Sir Robert Watson-Watt; "Speaking Personally," by Bertrand Russell; and "Film History," recounted by Robert Manvell,

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[5] Statement in The New Yorker, p. 27, December 11, 1948.

with the showing of films going back to the old "silents." Philip Harben, as the "Television Cook," showed cookery in close-up, and F. H. Streeter tended the Television Garden.

Fain[6] in his report on television in France says the lack of money is holding Television Francaise in check. However, they are sending out two telecasts daily, including an hour-and-a-half during the evening when they televise new motion pictures, dramatics and educational subjects.

Returning now to the educational service provided thus far by American television stations, it is interesting to note that a majority of the programs have been presented in cooperation with educational or public service organizations. Most of the programs have been of the "one-time only" variety in which a public relations value usually overshadows the true educational values. One, also, must consider that television operating costs are extremely high, and budgets have been limited to the extent that few educational programs have been presented from outside the cramped studios in which television has been forced to operate prior to February 1, 1949. One other factor to be considered is that a number of the more desirable educational programs have been sponsored commercially on television, and at a private television viewing conduced by the writer for a group of faculty members from Boston College, Boston University, Harvard, Massachusetts

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[6] William Fain, "Video in France," The New York Times, 10:11, November 21, 1948.

Institute of Technology, Northeastern and Tufts in April 1948, it was the concensus that the two educational telecasts ("You Are an Artist" and "The Nature of Things") were superior to the entertainment-type shows viewed over the National Broadcasting Company's television network that same evening.

On the pages which follow appear brief descriptions of educational television programs presented over American commercial stations prior to February 1, 1949. Since the general education approach is generally favored by television, the writer has grouped programs under headings suggested by the Harvard Committee:[7] (a) The Humanities; (b) The Social Sciences, and (c) Science and Mathematics.

THE HUMANITIES

Author Meets the Critic is a television version of a popular regular radio program presented over the NBC Television Network weekly. Each program, as the name implies, presents one prominent contemporary writer to discuss his work with a panel of critics, many of whom are frank and willing to point up the weaknesses in his writings. This series is sponsored.

Critic-at-Large is an educational program of the American Broadcasting Company's Television Network. Started in 1948, the series presents popular critic John Mason Brown and famous guests in informal living room discussions of books, radio, the theatre, and other subjects pertaining to the arts. Guests like Marc Connelly are well-known, well-informed and witty. This series is being offered for sponsorship by the Network.

Trippingly on the Tongue was an early public speaking series presented by WRGB, Schenectady, New York. Vera Gough, a speech expert at Boston University, was featured in this

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[7] Report of the Harvard Committee, General Education in a Free Society (Cambridge, Harvard University Press, 1945) pp. 204-230.

series on June 3, 1943, as she pointed up with a raw recruit words frequently mispronounced, the proper stance, poise and gestures in platform speaking.

How do You Pronounce It? was a quiz series presented by WRGB in cooperation with Russell Sage College during 1942 and 1944. Each program used a quizmaster, an expert and three contestants. Slides with the words to be used in the quiz were shown to the home-viewing audience as they were given to the contestants.

You are an Artist was introduced by WNBT, New York, as part of television's first daytime program. Immediately popular, the series with Artist John Gnagy was moved to a weekly evening spot where it continues in its third year. In each program, he seeks to prove that anyone can draw as he teaches the basic art forms. He also has published a book[8] which enables television viewers to learn to draw more easily. This series is currently presented over the National Broadcasting Company's Television Network and for more than a year was sponsored by the Gulf Refining Company.

Art for Your Sake was presented by WNBT during 1941. It consisted of illustrated talks on the works of the Great Masters as well as the etchings and paintings of contemporary artists, all designed to enhance the viewer's appreciation of art.

Painting as a Hobby was presented by WRGB on February 26, 1942. This program featured Marjorie Mannes, graduate of the Syracuse University College of Fine Arts, who discussed composition briefly, showed some paintings and closed the quarter-hour by doing a charcoal sketch of a model.

The Ancient Art of Pottery presented September 20, 1940, also on WRGB, offered Julius Pardi of the General Electric Corporation with a turning wheel throughout the demonstration.

Modeling in Clay on WRGB February 12, 1942, approached its subject entirely from the viewpoint of its being a hobby which, according to Dupuy,[9] was extremely popular with the viewing public.

Sketching through Belgium had Edward Buyck in a combined

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[8] John Gnagy, You Are an Artist (New York: Doubleday & Company, 1947).

[9] Judy Dupuy, "Television Show Business," (Schenectady: General Electric Corp., 1945) p. 69.

travelogue and art study on WRGB, October 14, 1942. He made rapid sketches to illustrate his commentary throughout.

Composition in Art was another WRGB program in which Charles McGarrahan, staff artist, explained art principles. Slides of the basic six art forms--triangle, square, rectangle, circle, etc., were used to illustrate his comments as he made rough sketches of each art form.

Gospel Illustrated was telecast March 17, 1943, by Phil Saint on WRGB and took the form of a religious chalk talk.

Art Interpretation of Music presented by WRGB on December 9, 1942, had John Broc, studio artist, sketching before the television camera visual patterns, inspired by recorded classical music being heard simultaneously; it was the interpretation of a mood rather than the telling of the story of the music.

Philadelphia Orchestra, under the direction of Eugene Ormandy, became the first symphony orchestra to be carried over television on March 20, 1948, when WCAU-TV originated the concert for the Columbia Broadcasting System Television Network.

Arturo Toscanini and the NBC Symphony orchestra was televised for the first time later that same evening, March 20, 1948.

THE SOCIAL SCIENCES

The Explorer's Club was one of the first WNBT Educational series and was designed for armchair adventurers. It started in 1940 and featured such explorers as Sir Hubert Wilkins and several colleagues who were first introduced to the television audience seated around a table "swapping yarns." Lehr[10] reports that the explorers took no notice of the television cameras, and the audience was given the impression of looking in on a get-together of the Explorers' Club. The host of the group then offered to show some of his films to illustrate the point of his conversation. At that point, the cameras were switched to the film studio, and the film in question was put on the air. Meanwhile, the men in the gathering carried on their conversation, which was then directed to the film. The host pointed out scenes of unusual interest and answered the questions of his guests as he went along.

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[10] Lenox R. Lehr, Television Broadcasting (New York: McGraw-Hill, 1940), p. 80.

The People's Platform, a special television production of the popular Sunday afternoon forum series, is presented over the Columbia Broadcasting System Television Network and offers a novel and lively treatment of public affairs broadcasting--the opportunity, perhpas, for the man-in-the-street to "talk back" to the experts. While a studio round-table discussion is in progress, a second television unit is trained on a crowd gathered somewhere in New York City; and during the studio discussion, members of the outside audience ask questions of the experts, who answer while the program is still being screened.[11]

United Nations Casebook, also on the CBS Television Network, features documentation and discussion of questions currently before United Nations committees, Council or Assembly. Lyman Bryson, CBS Counselor on Public Affairs, presides over interviews with UN notables. Film and graphic material are integrated into the program to show the organization, workings and results of the UN.[12]

Court of Public Opinion is an hour-long educational feature of the Dumont Television Network, originated by WABD, New York. Television, the business magazine of the industry in March 1948, describes the series thusly:

> Weekly feature staged in a court of law in which a question of current interest is put on trial. Witnesses pro and con are examined and cross-examined by counsel on the question at hand. The judge is a known scholar who tries to be impartial. The jury is composed of men and women selected from a studio audience or from people who write in to WABD requesting that they be selected for jury duty. After all witnesses are examined, the case is presented to the jury for decision. At all times legal procedure is maintained. This is one of television's better and more adult shows.

Cancer was the subject for a special program televised by WFIL-TV, Philadelphia, in cooperation with a local hospital and with the approval of the Philadelphia County Medical Society on November 19, 1947. It marked the first time that a live television program had shown how cancer can be detected. Brought before the cameras were patients with cancer in its various stages. A panel of cancer specialists explained how to detect various stages of the affliction. It was televised

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[11] CBS Listener's Guide, Winter, 1948-49, p. 6.

[12] Ibid.

at a late evening hour to reach only an adult audience.[13]

VD is being televised by WNBT, New York, as part of a cooperative effort with the City and State Departments of Health. Each program features a television film documentary on venereal disease.

Safety Driving programs were televised by WNBT in 1941 in cooperation with the New York Police Department. Here was shown the dangers of children playing in the streets, and of speeding motorists, together with noting the simple rules by which accidents can be avoided.

Correct Weights and Measures formed the basis for special dramatizations telecast by WNBT during its first year. This series showed the housewives, particularly, how to check up on and report "light" scales or other irregularities in weighing.

Old Schenectady was a series of historical programs presented by WRGB during 1943. Each program called for a panel of experts to discuss a phase of the city's development and frequent use of professional actors, model stage settings, etc., were used to liven up the programs.

It would leave this phase of the study incomplete if the writer failed to include mention of the war-time educational service of WNBT. Noran Kersta of the National Broadcasting Company reported in the spring of 1942:

> In New York City television is used as the chief method of training air-raid wardens. At present, the first group of 54,000 prospective wardens is obtaining its training in the five boroughs of New York City alone, where receivers are installed in all police station classrooms. At the same time the 60-mile coverage of WNBT enables thousands of additional organized civilian defense groups to obtain uniform and authentic training. Through radio relays this official training program has been telecast in the Philadelphia area by the Philco station WPTZ, and in the Albany-Troy-Schenectady area by the General Electric station WRGB.

During the past months, programs have been devoted

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13 News item, "Telecast on Cancer," Broadcasting, December 1, 1947.

> to the actual instruction of civilians in the use of gas masks, air-raid warden lessons and instruction in fire control...Reports turned in by police captains and air-raid wardens ranked this type of instruction above all others received by them to date.
>
> Further, it is difficult to train a sufficient number of qualified instructors to do the job in such a large number of locations. There is always a best lecturer for any subject. By television he can authentically instruct all parties instantaneously and uniformly. Standardization of training is thus introduced into the defense plans and considerable economies are effected in the time of the Government's instructors. New York City police officials have expressed the conviction that without television the task of training the tens of thousands of air-raid wardens would be most difficult and expensive.[14]

SCIENCE AND MATHEMATICS

The Nature of Things is presented weekly over the National Broadcasting Company's Television Network and originates in the studios of WPTZ, Philadelphia. It features Dr. Roy K. Marshall, Director of the Fels Planetarium at the Franklin Institute, giving a visual demonstration on popular scientific subjects. The series was sponsored by Motorola through January 1949.

Serving Through Science was a limited series of straight educational programs presented by the United States Rubber Company in cooperation with the Encyclopedia Britannica over WCBS-TV, New York, in the fall of 1946. It included two scientific motion pictures with a discussion of each following the projections.[15]

Weatherman is a five-evening weekly (Monday through Friday) series presented by the United States Weather Bureau from Washington, D.C., over the DuMont Television Network. On each program, Forecaster James Fidler uses several maps to explain weather trends as they develop, always being careful to avoid the technical explanations which might confuse the viewing audience. According to an article in TIME Magazine (March 8, 1948), Chief Forecaster Francis W. Reichelderfer feels that television is "just our sort of medium for our

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14 Orrin E. Dunlap, Jr., The Future of Television (New York: Harper and Brothers, 1947)pp. 14-15.

15 Articles in Television Magazine, p. 25, November 1946.

problem has always been to paint the weather picture in words, and....they don't convey enough."

Weather or Not was introduced in July 1948, as a WBZ-TV, Boston, feature on a similar five-a-week schedule. Dr. James M. Austin, Professor of Meteorology at the Massachusetts Institute of Technology, is featured in the series as he explains the weather phenomena and provides the daily forecase with his remarks being supplemented by maps and sketches by a professional artist. This series is now sponsored by the First National Bank of Boston.

Living Wonders is a weekly twenty-minute series introduced by WBZ-TV, Boston, in November 1948. Presented in cooperation with the Boston Museum of Science (formerly the Museum of Natural History), this series presents simple demonstrations of animal life. It is being offered for sponsorship.

The Johns Hopkins Science Review was introduced over the Columbia Broadcasting System Television Network from the studios of WMAR-TV, Baltimore, on December 17, 1948. Here faculty members present scientific demonstrations of work done in the laboratories of the school each week. The first program told the story of how the earth's surface was photographed from a guided missile seventy miles in the air. Films taken from the missile in its ascent were shown for the first time during the telecast.

Microvivarium was the title of one of the earlier WNBT programs. It showed and described in non-technical language the great battles that occur every instant between the uncounted hordes of bacilli in an ordinary drop of drinking water.

The Goodrich Show, presented by WRGB, Schenectady, August 6, 1943, was a half-hour documentary starting with a demonstration of the manufacture of synthetic rubber, and followed on to show the many post war uses for the product.

Glass to Metal Seals, also on WRGB, December 13, 1940, presented Dr. Francis Norton of the General Electric Research Laboratory, in a demonstration. The studio demonstration was followed by a film telling the story of the cathode-ray tube, which is the heart of television.

Experiment in Sound was another program by Dr. Norton, especially intended for school children. Here he explained ways of producing musical sounds and illustrated them with slides, old recordings and young musicians present in the studio.

There have been other types of educational programs, especially those teaching a skill, presented by television stations from time to time. However, the industry continues to lose large sums of money and cannot afford to spend a great amount of staff time or money in building this type of series, unless these educational telecasts can be made attractive to prospective sponsors.

Television is extremely costly to operate and its line charges are extremely high. Each program requires a tremendous quantity of manpower as compared with regular broadcasting. (Illustration--Average sports broadcast requires a minimum of 12 men, apportioned as follows; action announcer, color announcer, two camera men, assistant director, three video technicians, one audio technician, technical supervisor, program director (producer) commercial announcer.)

Line charges are limited with a result that television costs approximately $350 for each broadcast from outside the station's own studio. By the use of the micro-wave method (beamed direct from point of pick-up to transmitter without using coaxial cable or telephone lines) the cost of a telecast may be cut to about $200 for facilities alone. This, of course, is exclusive of talent charges, air time, and miscellaneous expenses in presenting a television series.

Until March 1948, television stations could not present programs in which musicians participated. This forced television stations to use only recorded music or groups

singing a capella. Since an agreement was signed by the television stations with the American Federation of Musicians, general television programming has improved in quality, and several of the nation's foremost symphonic groups have been televised.

Television requires considerable space in which to originate a program. Even the networks, up to a recent date, maintained only a single television studio. The current popularity of the medium has caused the several networks to expand their facilities, leasing old motion picture studios, theaters, etc. These expanded studio facilities will enable stations to devote the necessary space for setting up more local programs each day, and it is reasonable to conclude that this will be conducive to the building of more and better educational and public service programs.

The facilities for inter-city telecasting are still extremely limited. Until January 12, 1949, it was not possible for television programs from the Eastern United States to be viewed in the Chicago and St. Louis areas. Boston was not added to the expanding television network until June 1948, which was nearly five months after the telephone company completed its installation of an overland relay system to Boston. It is now predicted that Hollywood will be linked to New York by a similar relay system during the latter part of 1950. The completion of this inter-city relay system will enable television stations to increase the

number of hours on the air daily, make the medium more attractive to commercial clients, and require a more diversified type of program fare. This should result in a general increase in the number of educational telecasts.

Up to this time television stations have been making large use of motion pictures. However, the leading film companies will not release their productions to television. Hence, the bulk of films on television are upward to five years old, and despite their age, these films bring a high rental fee from the television stations. At the present time, the experts in the film and television field are working out an elaborate plan for future cooperation between the two media of mass communications. On the results of these conferences will depend to a great degree the number of excellent educational films which may eventually be viewed by television set owners or by children in schools. Most producers of classroom films refuse to permit their use by television stations.

During these early years of television programming, stations have had a tendency to present educational programs and series which were of interest to the greatest numbers of people. Hence, programs for the school-aged listener have been most neglected. The current boom in popular interest in television has prompted one network (National Broadcasting Company) to announce plans for the first major enterprise in educational telecasting. These will be the most compre-

hensive program series yet devised for children of pre-high school age and are to be on the NBC Television Network each afternoon, Monday through Friday.

The program series, under the overall title, "Stop-Look-and Learn," will encompass a wide range of subjects, including geography, history, government, science, literature and music, with emphasis on the entertainment features of each.

Plans for the forthcoming series were announced after a meeting of the organizing committee on December 21, 1948. The committee consisted of Superintendent of New York City Schools, William Jansen and James N. McAndrew, manager of New York City station WNYE; Grace Rawlins of Baltimore, representing the National Council of Elementary Principals for the National Education Association; Dr. Belmont Farley, director of radio and public relations for the NEA; Allen H. Wetter, assistant to the superintendent of schools of Philadelphia, representing the American Association of School Administrators; Lemuel Johnston, representing the National Association of Secondary Principals; Sterling Fisher, manager of NBC Public Affairs and Education Department; Norman Blackburn, national program director for NBC Television; the late Dr. James Rowland Angell, NBC public service counselor, and Jane Tiffany Wagner, NBC director of education.

"The pioneering move of the National Broadcasting Company to extend its television coverage to the field of

child education is soundly endorsed and praised by the New York City Board of Education," said Dr. Jansen. "We will make every effort to encourage children in the New York City school systems to view these programs at home and to use them as an aid in their classroom studies."

Dr. Farley said: "The complete cooperation of the NEA will be assured in the first major television effort for the youngsters of America. We will establish viewing experiments with teachers and students in various areas to make these telecasts as effective as possible in dovetailing the children's experience before their television sets with their school training."

Carlton D. Smith, Director of Television Operations for NBC, said: "We are proud to be associated with the leading educational groups of the land in the start of television's first great educational institution for the youngsters of America. All the facilities of the National Broadcasting Company will be thrown behind the series in an effort to bring the world's culture to children in the American home. We will extend these program series to all our stations as the NBC Television network extends from coast to coast."

Official endorsement and approval of the series has been given by Baltimore Superintendent of Schools William Lammel, and Philadelphia School Superintendent Hoyer.

All programs will be extended to station cities as the NBC network expands across the country. As the programs

come to these cities, the NEA and cooperating boards of education will set up viewing experiments with teachers and students utilizing the programs as a basis of stimulating interest in the subject matters. Programs will be produced by the NBC Television Department under the overall supervision of Norman Blackburn, national program director.

The series have been planned for after-school hours in order to tie together student, teacher and parent activities. Sterling Fisher, manager of NBC Public Affairs and Education Department, will serve as overall supervisor of the educational operations on "Stop-Look-and-Learn." Titles of the programs to be seen under the proposed plan are:

(1) Little Theater - a series of children's plays adapted from the finest works of children's literature.

(2) Explorer's Club - devoted to the study of geography and history through the cooperation of leading explorers. It will present some of the immense collection of films prepared by explorers relating to studies of geography and history.

(3) Your Uncle Sam - a series explaining the work and activities of leading government departments. Many of the activities to be included will be presented in the form of direct pick-ups from such places as the White House, State Department, Supreme Court and Congress. It will cover the federal

scene as well as the village, cities, counties and state governments.

(4) Science in Your Life - This series will present material pertaining to the knowledge of various fields of science including chemistry, biology, astronomy, health.

(5) Folkway in Music - In cooperation with the NBC Music Department, will combine folk music and folk dancing of the United States and many other lands.

Previous cooperative efforts between commercial stations, networks and public school groups are noted elsewhere in this study.

The announcement of the "Stop-Look-and-Learn" project is looked upon generally within the industry and in some educational circles as being the first bright spark to be kindled by commercial television during the current boom. However, Dr. Franklin Dunham, Chief, Uses of Radio, United States Office of Education, recently informed the writer that he feels the greatest contribution to be made by television is in the teaching of skill subjects, and these are being overlooked in the "Stop-Look-and-Learn" project in favor of a general education approach at the outset, at least.

Since July 1947, Broadcasting Magazine has been publishing monthly information on the development of programming patterns within the television industry in this country.

Bruce Robertson, Senior Associate Editor, compiles the "Telestatus" reports and in answer to a letter from the writer, frankly admitted that the question of what constituted an "educational program" was an embarrassing one to him. He reported that each month he goes through the list of commercial programs on each television station and allocates them to the various program catagories. Usually, the title or description of the program gives him a fairly good idea of its type, although, he hastens to add, there is always a certain amount of guess work involved.

Despite this statement, it is the opinion of the writer that the margin of error in the Broadcasting reports could not possibly be sufficient to nullify the value of the information contained therein. Hence, based on a comparison of these reports from July 1947 through December 1948, it will be found that there are definite signs of educational television forming only a minute part of the entire program structure. It is a danger sign which should not be ignored by educators, or broadcasters.

Table I concerns itself with the Rank of Television Programs in Use of Airtime. What is more important, it shows that educational programs, commercially sponsored, have been dropping steadily in number over the eighteen-month period. Whereas in July 1947, education placed sixth on the list, it moved into fourth place in April 1948, and then steadily dropped to thirteenth place in October, 1948.

TABLE I

RANK OF TELEVISION PROGRAMS IN USE OF AIR TIME

Based on Telestatus Reports compiled monthly by BROADCASTING

Type of Program	July 1947	Feb. 1948	April 1948	June 1948	Aug. 1948	Oct. 1948	Dec. 1948
Sports	1	1	1	1	1	1	1
Musical	2	8	10	12	10	8	10
News	3	6	3	2	3	3	4
All Announcements	4	-	-	6	5	4	5
Drama	5	4	8	4	4	6	3
Education	6	5	4	5	9	13	11
Variety	7	3	2	3	-	2	2
Children's	8	2	6	7	6	7	7
Special Events	9	9	7	13	-	14	13
Commentary	-	10	11	11	-	-	-
Discussion	-	11	9	9	11	-	12
Audience Participation	-	7	5	10	7	9	6
Quiz	-	-	-	8	8	10	8
Number of Television Stations Reporting	11	15	13	20	32	38	41

Education rallied to move back into eleventh place in the final study made in December 1948.

It also must be taken into consideration that the number of television stations in this survey increased

from eleven reported in the summer of 1947 to forty-one by the end of 1948. In other words, as more stations came on the air, the time given to educational-type programs by commercial sponsors diminished.

With the coming of more stations, greater numbers of receiving sets in daily use, and longer hours of telecasting, a study of Table I shows certain definite changes in program patterns. Sports continued in top place throughout the entire period. News, announcements and drama continued to rate high on the list. Variety programs, a definite adaptation of a popular aural broadcasting technique, has jumped to second place. What is truly surprising is that the special events type of program, long heralded as one of television's strongest selling points, has only been able to place as high as seventh on this table, and then only once, during the seven report periods.

Table I accentuates the need for educators to act promptly, to contact their local television outlets, offer their cooperation, survey their own subject matter which is most closely related to community needs, and most readily adaptable to television, at a minimum of production costs. Several television programs already have indicated that education can be adapted to the medium and several sponsors have shown a willingness to pay the bill on such series.

TABLE II

ANALYSIS OF EDUCATIONAL TELEVISION PROGRAMS COMMERCIALLY SPONSORED

(Based on Telestatus Reports compiled monthly by BROADCASTING)

Month	No. TV Stations	Studio Live Hrs.-Min.	Studio-Film (or slide) Hrs.-Min.	Studio Live &/or Film Hrs.-Min.	All Re-motes Hrs.-Min.	Total by Prog. Class Hrs.-Min.	Per Cent of Total Pro-gramming Devoted to Education
July 1947	11	1:40	1:00	---	---	2:40	1.4
Feb. 1948	15	2:37	1:37	---	4:35	8:49	4.2
April 1948	13	8:59	2:20	---	---	11:19	4.7
June 1948	20	7:45	:58	1:10	1:00	10:53	5.0
Aug. 1948	32	3:00	1:29	1:30	---	4:59	1.9
Oct. 1948	38	2:00	:30	:15	---	2:45	.7
Dec. 1948	41	1:20	---	4:15	---	5:35	1.3

From Table II an Analysis of Educational Television Programs Commercially Sponsored, it is evident that as the number of television stations has increased in the same eighteen-month period, the percentage of the total programming time devoted to education has been steadily declining.

Here also is shown a breakdown into production types which these educational programs have taken. It is surprising to note that extremely little has been done with the remote programs, that is, with programs originating outside of the stations' studios. Less than six minutes was given to this type of program origination in the eighteen-month period despite the fact it has been widely stated that museums, observatories, places of historical interest, and the like, form natural source materials for educational telecasts. Yet, the National Association of Broadcasters study[16] reaches the conclusion that remote programs are the least expensive ones that a television station may originate, and in this period of high operating costs it is strange these stations have not made greater use of these programs from outside their studios.

The greater amount of educational program time has been devoted to programs originating entirely within the station's studios, and using live talent. The most recent month's report, December, shows a tremendous increase in the

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[16] Charles A. Batson, Television, A Report on the Visual Broadcasting Art (Washington: NAB, 1948), p. 20

percentage of time in which films are integrated with the live studio telecast.

It also is interesting to note that 1.4 per cent of the total television programming time was devoted to educational type shows in July 1947, when only eleven stations were on the air. During the months which followed the percentage of time increased substantially with new stations added to the list. It reached a peak of 5.0 per cent in June 1948. However, since that time, the percentage of time for sponsored educational programs has rapidly declined to a December 1948, figure of 1.3 per cent. These figures have been explained to the writer by Mr. W. C. Swartley, General Manager of WBZ-TV, as being caused by a tendency of sponsors to increase their television budgets with the coming of more stations and the owning of more receivers in the area. Educational programs traditionally are in the low production cost bracket. Hence, as production budgets are increased there has been a definite swing toward purchasing the entertainment type of television program.

However, Vice-President Richard H. Hooper of the Radio Corporation of America, advised educators:

> Master the facts about television equipment, its capabilities and limitations, so you may know the materials with which you work. Strive for teamwork between educators and local television broadcasters so that each other's problems may be understood and solved in cooperation. Avoid amateurishness in educational productions.

> Sponsored programs teaching how products are made, the roles of these products in our national economy and how to buy them properly, are often educational problems, too.
>
> Closed circuit television facilities are the best means of presenting those educational television programs which cannot interest large cross-sections of the public. This type of television will permit superior instructors to teach all the students taking a given course in a community, allow the operation of costly facilities, such as electron microscopes, which could not practically be duplicated in each school, to be observed in the various classrooms, and permit the educational system to determine the hours of the television presentation.[17]

A somewhat parallel view is taken by Worthington Miner, Manager of the Columbia Broadcasting System's Television Department in 1944, who wrote:

> A danger of educational television lies in the fact that it may some day be received by a large percentage of the 136,000,000 people in the country. The number of subjects with sufficient universality to satisfy the demands of such an audience is critically limited. In developing AM radio, a heavy percentage of the public was interested in music of one form or another. No duplicate in visual terms has yet been found for television. Still, the televising of current events of the day have the value of dramatic immediacy.[18]

At the same time Miner predicted that television networks will emphasize indirect rather than direct education. Illustrating the indirect method would be to teach how to paint a picture through making a strip character into an artist. Much the same result could be obtained also by showing things in the backgrounds, props, etc., on television

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[17] Richard H. Hooper, Educational Television, Educational Screen, p. 406, September 1947.

[18] Worthington Miner, "Television as an Educational Force," School and Society, p. 115, August 19, 1944.

which would have an impact on the home. According to Miner, the Columbia Broadcasting System experimented with music on television in December 1942, using close-ups on instruments carrying the dominant theme in a symphonic group. He states that such a treatment by television can improve the public sense of appreciation.

Like Hooper, Miner looks to closed circuit educational programs as a distinct possibility on television because it would provide the opportunity to infuse the educational system with the inspiration of truly great teaching.

Miner believes further that color and large-scale images are vital to the success of educational television:

> Even when transmitted to the home, full effectiveness in the treatment of educational subjects is impossible without the larger image. Both this and color are available and should be released to the public so that television can develop as a stupendous and evocative educational medium.
>
> Monochrome image confines the scope of television as an educational force, and critically limits the potential effectiveness of every type of educational program. Art, a vast percentage of all the sciences, chemistry, botany, geology, etc., rely on color as a fundamental attribute of recognition. A black and while reproduction of the action of a piece of litmus paper would hardly suffice to distinguish a salt from an acid.[19]

Leonard Power, Educational Consultant for the Grolier Society, listed the following problems, all of which confront the television broadcaster and the educator in making the most effective use of the medium for educational purposes:

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[19] *Ibid.*

1. The manufacturing of sets
2. Cross-country transmitters
3. Approved television standards[20]

The industry is taking rapid strides toward solving all of these problems, and the next two years should see them all removed as problems for the educator.

In using films in the classroom the teacher has been faced with three specific problems, which carry over in the use of television on the in-school situation. These are:

1. Operating the machine
2. Selecting and ordering films
3. Fitting the program into teaching plans[21]

The first of these may be solved in television by having receiving sets installed permanently in the classroom with a result that there need be a minimum of difficulty in operating the set and no problem of room assignments for the equipment as in the case of the motion picture projectors.

Dr. Abraham Krasker of Boston University, in a discussion with the writer, declared he looks to the day when television stations will plan program service for in-school viewing. He feels that such stations could show educational films on a frequent schedule as a special aid to teachers. Such a plan would simplify the problems of film selection and ordering, since this could well be done by a community committee and the classroom teachers notified in advance

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[20] Leonard Power, "Television, Challenge to Education," Virginia Journal of Education, p. 257, March 1944.

[21] Ibid.

when they also might receive printed outlines for preparing the classes for television viewing.

The third point, that of fitting the program into teaching plans would probably be the most difficult problem to overcome. In the public schools of Massachusetts, there is a traditional aversion to all regimentation in teaching. The local school committees are proud of the independence of their school systems, and perhaps, justly so, too. Many of the schools reach similar goals of achievement by the end of the year but often by widely different methods. Furthermore, all children do not learn with equal rapidity. Others are in greater need of individual attention. These are but a few of the barriers in the way of scheduling definite series of educational television programs for in-school use. It will take many years of slow progress to bring these factors into line for the most effective use of educational television in the classrooms and, even then, they will still be confronted by the great problem of having the program televised at times which will conform with the classroom schedules. This will be all the more complex in the large city high schools where the same subject matter is presented at various hours of the day to different sections of a particular grade or class.

Power goes further by asking: "Who'll pay for television education?" This he answers with five different methods:

1. The broadcasters will offer such programs as sustainers.
2. Such programs will be institutionally sponsored.
3. News programs will be sponsored by newspapers.
4. Programs will be produced by schools and school groups in cooperation with stations.
5. Schools will own and operate stations for televising educational programs.[22]

SUMMARY

In closing it might be well to quote from the School Executive[23] article which predicts a great future for the medium as it will extend learning opportunities to adults whose formal education has ended.

> It will draw on art, music, natural science, home economics, business education, craftsmanship, gardening and first aid.
>
> Television can interpret education to the homes instead of reaching only a few through parent-teacher associations.

This Chapter has noted several important facts:

1. Although outclassed by the British Broadcasting Corporation in the early years of the art, American television programming is now the best in the world.
2. A great many programs, classified as educational, already have been presented by American television stations.
3. A number of these educational telecasts have concerned themselves with skill subjects, or as they are called in the trade, "The How-To-Do" type.

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[22] Ibid.

[23] "Television Challenges Education," School Executive, p.41 October 1944.

4. The National Broadcasting Company, in cooperation with prominent educators, has planned a five-day weekly series of educational telecasts for home viewing, which will aid children in their classroom studies.
5. Because of the high costs of producing television programs, it is believed by many broadcasters that educational programs on this medium must be sponsored.
6. Between July 1947 and December 1948, educational programs on television dropped from sixth to eleventh place in the amount of air time allotted by program types.
7. Television stations reported 1.4 per cent of their total programming was devoted to educational shows in July 1947. This figure had risen to 5.0 per cent by June 1948, and had dwindled to 1.3 per cent by December 1948. These educational programs were all commercially sponsored.
8. Closed circuits may be used for educational television.
9. Many technical problems remain to be solved before educational television can be really successful.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

It is apparent from this study that after years in the laboratory and experimental stages, television has developed as a natural extension of broadcasting service. As the public has responded to the appeal of television, there has been a general awakening in the potentialities of this newer medium on the part of the commercial broadcasters and of the educators as well. Sales representatives of these stations are reporting the tremendous impact of the medium. They are confirming television's influence as a motivating force by showing that special sales offers are bringing rapid and increased numbers of responses from television viewers.

Educators, in some instances, are carrying on special studies of the potentialities of the medium for their specific areas of learning. Typical of findings from such investigations is the January 1949 statement by the Special Committee on Radio, Television and Frequency Modulation at the State University of Iowa to the effect that television offers the great potential medium for off-campus education which has appeared since the advent of extension work and portends tremendous and far-reaching changes in methods of

teaching. The writer holds further that it could, in fact, "become extension," if educators possess or have access to television facilities.

The press also has become conscious of television and education, and the New York Times said editorially that the few great teachers have their classes limited to a comparative few, while throughout the country well-meaning lesser teachers, not similarly endowed as to mind, energy, training, personality or enthusiasm are doing their limited best, but fall far short of the performance of these masters. This point may be debatable, but the fact remains that television is a potential teaching aid and can upgrade teaching methods in some instances. Jack Weir Lewis, Associate Director, Rocky Mountain Radio Council, who was sent on a tour of television cities by the Rockefeller Foundation in the fall of 1948, found that the planning of television programs for children leaves much to be desired, and the field is potentially dynamite so far as education is concerned.

These reinforce those in the body of the thesis which cite the mechanical difficulties which underlie the potential importance of television as an aid to education, and more emphatically on the adult level. It also stresses the need to maintain a common clearing house for television experience to speed the improvement of education's efforts on this new medium and cut to a minimum the need for trial-and-error methods of building such programs. These conclusions

are based upon an exhaustive survey of available literature on television in education, much of which is of a contradictory nature.

The broadcasters have made frequent pronouncements of their willingness to present education via television although such comments have a general vagueness about them. This may be due, in part at least, to the complexities of the new medium, plus a limited understanding by these broadcasters of the purposes of general education in a free society. In any case, it presents a weakness in the existing television management structure which should be corrected before the schism between television operators and educators grows deeper.

It also is apparent that the educators are not without blame in the situation as it exists today. They are looking a bit selfishly at the medium of television. Many of them speak of adapting the classroom directly to the medium. It is the opinion of the writer that this is not possible, or even practical. A sizeable segment of the population, for one reason or another, has built up in its mind a misconception of education. This may be due in some instances to unpleasant school experiences in their formative years. This argument is particularly invalidated by the fact that approximately 100,000 adults in the Boston area take some form of studies annually. However this adult education technique, in many instances, is carried on with a minimum of the

formalized classroom methodology objected to by these same adults in their formative years.

Radio has been looked to for entertainment primarily by a majority of listeners through the years. One Harvard professor told the writer that when he is tired he likes to relax and be entertained. Hence, when he listens to the radio it's for entertainment which, he says, he enjoys doing. However, radio is licensed by the Federal government to operate in the "public interest, convenience and/or necessity." Such being the case, a part of each station's time is devoted to educational and public service programming. Since there are several stations in most areas, the listener has an opportunity to select a type of program which will satisfy his tastes at that particular time. That is the democratic, American way of doing things.

Now, along comes television which, after a prolonged struggle between the radio broadcasting industry and the motion picture industry, has been designated as the proper outgrowth of radio. It is being guided for the moment by the standards for aural broadcasting. Its programs are patterned closely along the lines of conventional broadcasting. However, there is a rising tide within the television field of persons who feel that it is a medium which calls for an entirely new approach program-wise. They feel it is neither radio, nor the theater (motion pictures). It is this group which contends further that the classroom method cannot in

and of itself be carried over into television with the greatest potential for acceptance by the viewing audience.

This all serves to point up the comment by Douglass[1] that radio developed its extensive programs of amusement without school interference or cooperation. He reported that, as late as 1935, it was the exceptional school in which more than a perfunctory program of appreciation of radio had been developed. Educational forces had little to do with the development of radio programs. Appreciations gained in the classrooms have made little difference upon listening habits. Educators missed their target in standard broadcasting, and it now appears that they may be well on their way to missing their second chance in television.

In order to develop the most efficient balance in television programming, it is necessary to understand just who comprise the viewing audience. Standard broadcasting went through the same difficulties in its early years, most of which time programs were unsponsored and so informal that they were not pleasing to the listener. However, it was to the benefit of the industry that several methods of audience measurement were introduced. Television today is confronted with a need for scientific methods of determining its viewing audience, its tastes, its habits, etc.

To date both broadcasting and television have come to

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[1] Aubrey A. Douglass, Modern Secondary Education (Boston: Houghton Mifflin Co., 1938), p. 749.

rely on the research of social scientists to determine information about the audiences. After the National Elections in November 1948, the whole question of polls and polling methods came in for criticism and scrutiny. From this incident may come a more scientifically accurate and reliable method of obtaining information of the type needed in building a balanced television fare with programs of entertainment and education.

The writer was able to obtain considerable information about the television-viewing audiences. While he cannot attest to the scientific reliability of all such information, or the control methods used in the samples, it seems safe to assume that this phase of the study offers some indication of the American home-viewing audience as it exists today.

It was interesting to discover that 80 per cent of the television receivers are in private homes, and the percentage figures are mounting monthly. The average receiver owner is in the middle-income group, and there are approximately 3.54 persons at each receiver during the seventeen hours weekly that the set is in use.

Over 11 per cent of the television home audiences prefer educational-type programs. This is a surprisingly large percentage for studies of standard radio listening habits, compiled by the National Opinion Research Bureau at the University of Denver in 1946 indicated only 6 per cent of the listeners expected this type of service on their radio.

The higher figures for television may be due in part to the fact that the educational programs actually were superior to the commercial programs on television. This was indicated by several television receiver owners in talking with the writer. The so-called educational programs were economical to produce. Hence, small programming budgets might be stretched in this manner. Also, several fields of education were easy to adapt to the new medium, and what was more important to the television station operator, these educational programs were attractive to several potential sponsors.

It also is interesting to note that the television audience has expressed a preference to have their education simplified when presented on television. They favor the "sugar-coating" of education, a fact which is difficult for the educator to accept. This may be a carry-over from the fact that the modern American has become more visually-minded in the past generation. He does less reading, sees more motion pictures and spends considerable time listening to his regular radio. All of these factors combine to make him expect education to come to him in "The Readers' Digest" method. The unusual sales of condensed editions of books, ranging from the classics to the modern novels, is further evidence that more and more people are interested in things in their capsule form. This poses a tremendous problem for our entire educational system and presents a special challenge to teachers who are considering the possibilities

of "arm-chair" education or classroom education via television.

A handful of colleges and universities have had experience with television to date. Although the State University of Iowa operated its own station in the old scanning disc days of television and has a construction permit for a non-commercial television station at the present time, it appears that, by and large, educational television programs will probably be worked out by colleges, universities and school organizations in cooperation with and over commercial station facilities. This assertion is prompted by the report of the National Association of Broadcasters[2] that a community television station costs approximately $96,000 for a transmitting plant alone, and another $92,000 for studio equipment. Added to this would be the costs of staff personnel and programs bringing an annual total of $356,000 to own and operate a 500-watt television station. Naturally, this is prohibitive as an exclusively educational service in most areas. Until such time as the costs can be slashed to a quarter of this figure, few if any, educational groups can afford their own television plant.

The New York Board of Education and the Chicago Board of Education pioneered the way in building educational programs for presentation over commercial television stations.

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[2] Charles A. Batson, Television, A Staff Study by the National Association of Broadcasters, 1948.

These were on the secondary school level in most cases although very little has been done with actual in-school viewing. This is caused by the lack of receiving equipment, which, in turn, is limited by high costs, and the limited number of programs available to classes during school hours. Several educators have expressed a hope that when more suitable receivers are available for schools, commercial television station operators will turn over certain morning hours for special programs adapted for classroom use. Here the best teachers in an area might present a brief lecture and demonstration which would then be followed up in the individual classrooms by the regular teacher in charge. It is believed that this would be an economical and efficient means of teaching children in school, and the commercial broadcasters might give to the schools a portion of the day which might not otherwise become commercially profitable to the television station. While such stations could not measure the success of this plan in dollars and cents returns, they could easily measure their success in good will and public service to an important segment of the community.

In response to a questionnaire circulated to owners of non-commercial radio stations of the country, the writer learned that over a third of these radio educators are agreeable to modified, institutional sponsorship of educational programs on television. They are sympathetic to the tremendous expense involved in building programs of this

type, and are willing to have other agencies share the expense, providing it is done in good taste. This attitude, which is an almost complete reversal of the policy in conventional radio, may be prompted by the trend in recent years for commercial organizations like the Coca Cola Company, Westinghouse, Pan American Airways, etc., to prepare expensive teaching aids, with a minimum of advertising, for use in social studies classes and in other subjects of the elementary and secondary school curriculum.

Whatever the reason for this shifting in attitude, it is an encouraging sign to the commercial broadcaster who operates a television station and to the educator who has taken an open-minded attitude toward the whole problem of making effective use of television for educational purposes. It is a new medium, for which a new method of teaching must be developed or educational television will quickly fall into the same rut where educational radio has been grooved. There, the emphasis has been on public relations objectives rather than sincere and well-established educative goals.

The commercial telecaster has found from his early experiences that the teaching of skill subjects is best received by his audience. The "How-to-do-it" program has been extremely popular, possibly because it involves the viewer in the activity itself. It is the opinion of the writer that television holds considerable promise for those concerned with teaching skill subjects.

In the early days of broadcasting a considerable number of educational programs were presented, but as sponsored programs increased, the time available for education on the air dwindled. In television, the trend already appears to be following the curve of the older medium. The writer tabulated information reported over a period of eighteen months in Broadcasting Magazine and found that educational programs had dropped from sixth to eleventh place in the amount of time made available weekly to various major program classification by the television stations of the country. This decline must be checked. The educators must survey their working tools, that material which can be of the greatest service to the community. They must become a working team with commercial telecasters and build this material into series. They must be ingenius in their treatment of such material, and they must encourage the viewing audience to voice reactions to these presentations. Only in this way can educators prove what continues to be intangible theories as to how education can enter into its own on television.

Vandermeer[3] writes that the potentialities of television are only dimmed by its negative arguments. First, there are technical difficulties. How about long-distance transmission? What about image size? Why is there no color? These consi-

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[3] A. W. Vandermeer, "From Textbook, To Movie, To Television," Elementary School Journal, pp. 276-279, January 1948.

derations and others put educational television in the not-too-immediate-future. Television is attacking these problems with great vigor, and the progress has been tremendous.

The writer agrees with Vandermeer that a more important practical argument against the possible encroachment of television on teaching is the lack of rapport between the "televised" teacher and his audience. How can individual differences be taken into account? Can the person who teaches by means of television answer questions, sense the presence of confusion in the minds of the learner, diagnose difficulties, perform remedial teaching on the spot. The development and refinement of electronic intercommunicating devices, either already in existence or in the blue-print stage, may compel an affirmative answer to these questions.

It would appear evident from this study that all alert educators, both in public and private schools, in the colleges and in the universities, should become conscious of the educational potentialities of television. They should study the early experiments with the new medium by educators and by commercial telecasters in the name of education.

There are several areas for immediate study of television and education which appear necessary at this time:

1. An analysis of the content and production techniques of radio education to discover mistakes to be avoided in all future efforts.
2. An analysis of all existing television programs both

entertaining and cultural, to determine their possible correlation with education.

3. A canvass of school and home facilities of the nation available for maximum utilization of television programs.
4. A study of teacher attitudes toward the correlation of their courses with educational programs of television stations.
5. A study of pupil attitudes toward the correlation of television programs with their curriculum.
6. A comprehensive investigation of the educational levels at which television can be most effective.
7. A comparative study of the effectiveness of various known techniques available for presenting education via television.
8. A study of attitudes changed as a result of viewing such programs on television.
9. A controlled study of viewing educational television programs in individual and group situations to determine problems presented in such cases.
10. A study to determine the relative speed of learning, and rate of retention of such learning of television as against sound broadcasting.

The Schwerin Research Corporation is carrying on a special study for the National Broadcasting Company at the present time in an effort to get the answers to several other ques-

tions about the likes and dislikes of the manner in which television programs are staged. These questions, most of which are important to the television-minded educator, include:

1. How long can scenes be held before liking diminishes?
2. Are film presentations better liked than live shows, or vice versa, and why?
3. How long will an audience spend in front of a television set?
4. What shows can be effectively broadcast simultaneously on radio and television?
5. Who is available to see daytime programming, and what kinds of programming have greatest appeal for this group?

The writer agrees with the conclusions of the Special Committee on Radio, Television, and Frequency Modulation at the State University of Iowa which found that the consensus holds that television will be a dominant medium in United States communications. The total development may take from five to twenty-five years, but television's key position in the future is generally accepted by all elements of the industry, and any broadcaster who fails to take this into account in his long term planning must ultimately expect to pay the penalty.

The writer also is of the opinion that there is a great challenge to both the educator and the broadcaster in this

new electronic age. The field has been expanding so rapidly that the educator must act quickly or the medium may pass him by completely. It is costly to operate and costly to program. Hence, the educator must first determine the areas of ignorance in his community and then survey his subject matter before studying the proper techniques for actual television presentation.

It would seem that the simple presentation is more desirable until the technical difficulties of small screens, lighting, etc., are removed.

There is reason to believe from this study that the broadcaster is willing to work in close cooperation with the educator to keep learning a life-long experience for every man and woman after the next decade.

The writer humbly recognizes the inadequacies of this study. However, he feels that it has served a purpose in assembling data, much of it not generally available, and preserving it for future studies by others of the impact of television on the school, the home, and the individual.

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